Astounding SCIENCE FICTION

OCTOBER 1947
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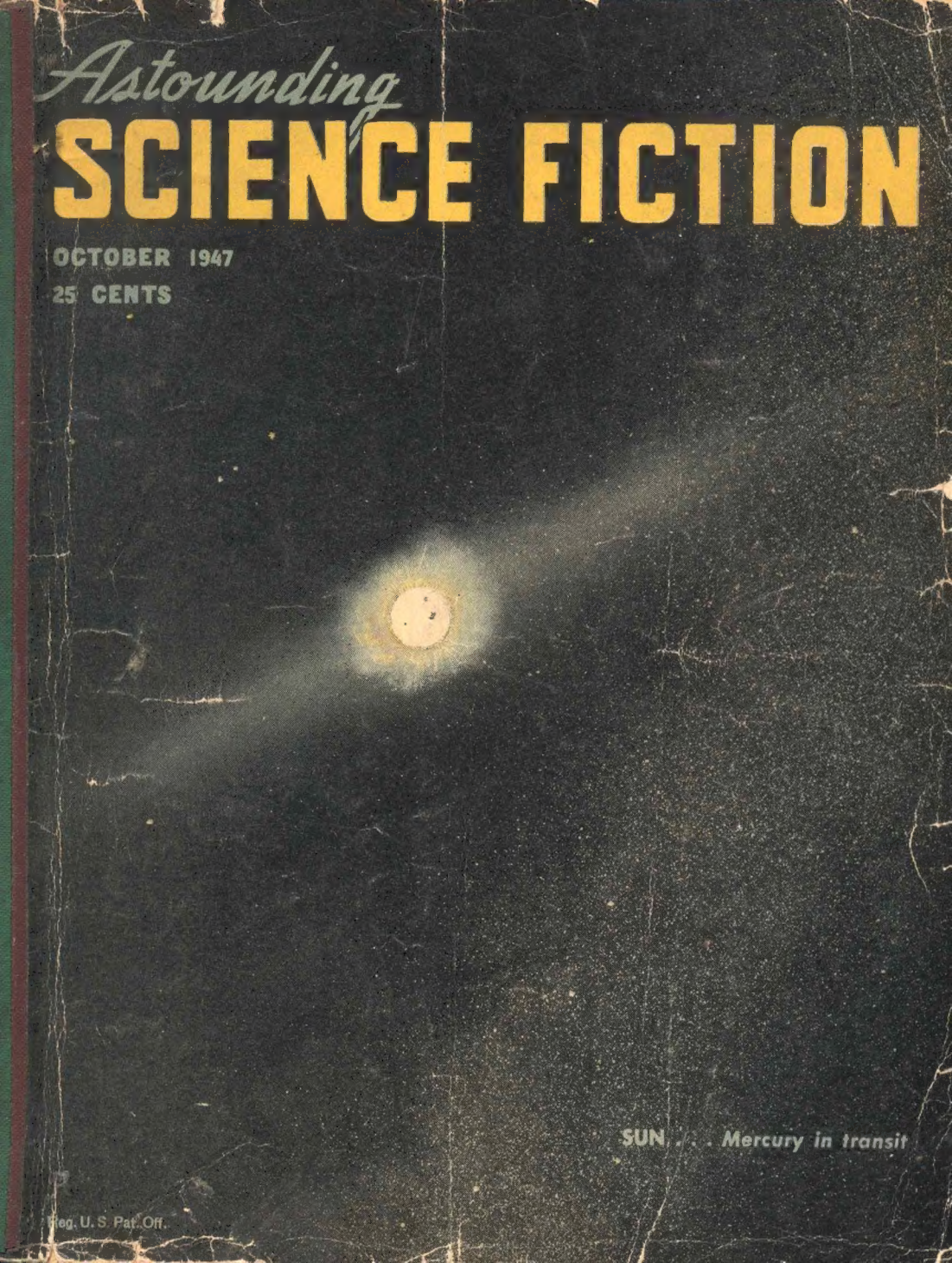

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Reg. U. S. Pat. Off.

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Astounding SCIENCE FICTION

Reg. U. S. Pat. Off.

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Illustrations by Cartier, Orban, Rogers and Timmins

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NEXT ISSUE ON SALE OCTOBER 21, 1947

FLYING

SOMETHINGS

As we have remarked before, Science Fiction is no news magazine; these comments anent flying saucers or what-not are a few months late, but concern things of even longer range interest to science-fictioneers.

Whatever they were, if real, and as described by those who believed they saw them, a few conclusions are fairly clear. They weren't products of a foreign terrestrial power. Anybody having a plane that good would darned well keep it to himself—until he meant to use it! The same applies to a United States Government device: they'd have been test-flown off some small Pacific island, where none but a few selected personnel, plus a few thousand fish, would have been around to report. That would mean a fair chance that they were being piloted by visitors from outside.

Latest astronomical theory indicates Venus is a waterless dust bowl—its clouds a mantle of dust storms. (See R. S. Richardson's article "New Paths To New Planets" in the September 1947 *Air Trails*.) Mars has so thin an atmosphere that only slow-moving, lower animal forms could operate. Jupiter has too deep an atmosphere, and the other planets are either too violently cold, or too violently hot. Visitors from outside would be from *way* outside—interstellar.

Skip, for the moment, the problem of how they made the trip; consider how we would plan a reconnaissance of an alien, inhabited planet if we made the trip.

If we landed on an alien planet that displayed marked signs of technically civilized life, there would be considerable point in landing unnoticed. We'd want to make a first landing in some backwoods, uninhabited forest area, where there would be plently of natural cover for our ship, and then conduct reconnaissance by atmospheric type planes of small size, but the fastest jobs available.

For this reason, we'd want to

land in an uninhabited patch reasonably near centers of civilization. We'd take considerable care that our scouts weren't trailed back to the ship, and that they weren't spotted on the way out. Knowing all about radar—and probably six or a dozen other detection schemes based on other spectrum possibilities—we'd see to it that the ships weren't easily tracked. Make 'em out of plastic, which more nearly matches the properties of air than any other type of solid matter. Some metal would be essential, naturally, but it would be minimized. Preliminary long-range scouting would have assured us that the planet to be investigated did not yet have space travel; an easy way to enter and leave the areas to be investigated without back trail the investigatees could follow then would be to approach from almost straight up—say two hundred miles above—and take a similar hop going home. After all, if we're doing the exploring, we do have space travel; such a hop would be peanuts to us.

For several months, our investigation would be conducted by noncontact observation; until we know much more about the people, we'll do well to stay clear of them. After some weeks though, a stealthy raid might kidnap a few inhabitants for general questioning and investigation. In this, we'd be very smart *not* to damage the kidnaped parties; the resentment of a technically civilized race can be distinctly unwelcome, even to a more powerfully technical people. Investigation of local animals can give all the necessary basic biological science for preliminary understanding of the local race.

After several months of watching, listening, and picking up radio broadcasts, plus investigation of kidnapees, there would be a lot of material to digest. Captured books, particularly children's books, would give adequate keys to the languages. At that point, we would be smart to clear out for at least a year of concentrated study of the material at hand. The captives could be fairly safely released unharmed; in any race, anywhere, the weird tale of three or four individuals about an improbable and melodramatic capture by alien intelligences—particularly if the race hasn't yet developed space travel themselves—is going to be laughed at. The first visit could then be made without serious indication of its happening at all.

In the May 1945 issue of Astounding Science Fiction we carried Murray Leinster's yarn "First Contact" that explained the necessity of considerable caution and study of any alien race before making formal, all-out contact. Similar considerations will apply to the race first investigating an alien planet; they'd be very wise to learn all they could before making their interest apparent.

It might be a year or five years before any further steps were taken.

At various times in our stories, we've discussed a galactic empire.

(*Continued on page 103*)

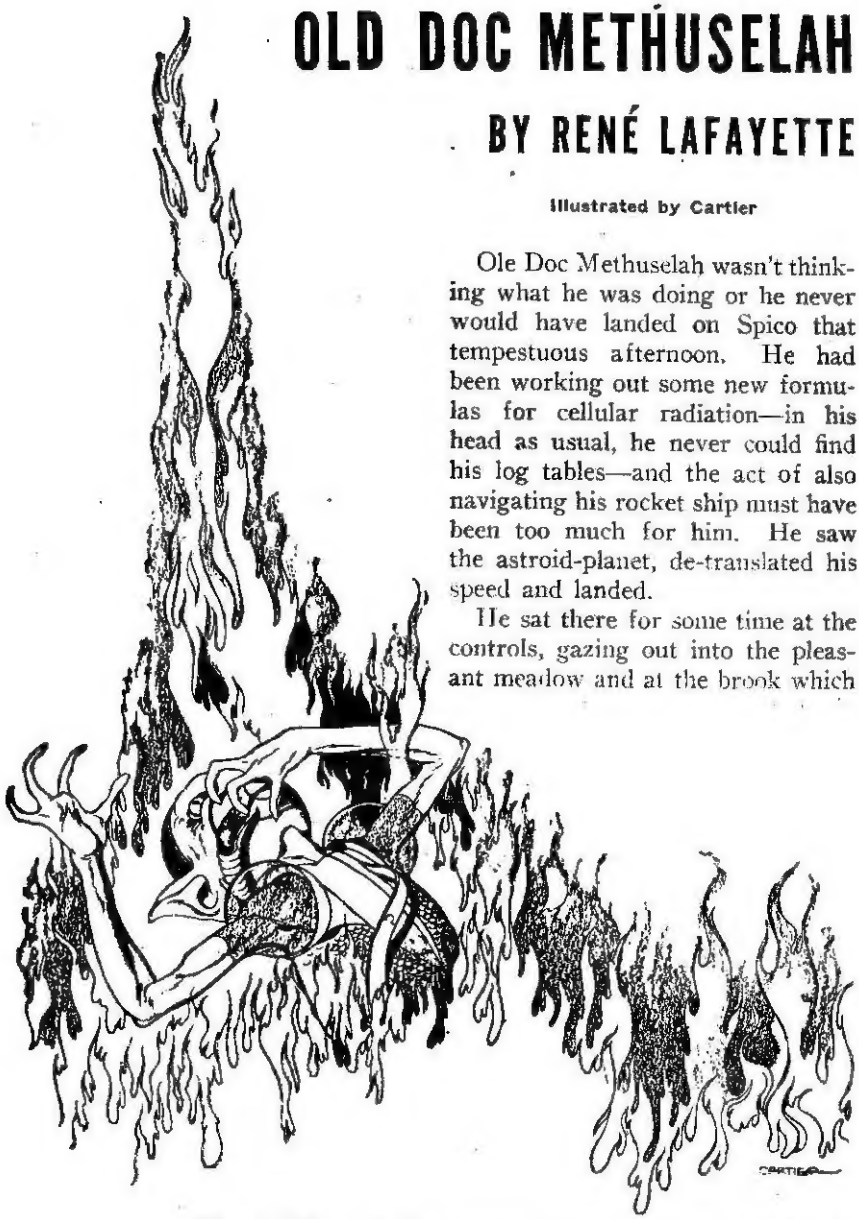
OLD DOC METHUSELAH

BY RENÉ LAFAYETTE

Illustrated by Cartier

Ole Doc Methuselah wasn't thinking what he was doing or he never would have landed on Spico that tempestuous afternoon. He had been working out some new formulas for cellular radiation—in his head as usual, he never could find his log tables—and the act of also navigating his rocket ship must have been too much for him. He saw the astroid-planet, de-translated his speed and landed.

He sat there for some time at the controls, gazing out into the pleasant meadow and at the brook which



The Soldiers of Light were bound by oath to deal only with medicine, and never with politics. But politics can be bad medicine for human health and welfare.

wandered so invitingly upon it, and finishing up his tabulations.

When he had written down the answer on his gauntlet cuff—his filing system was full of torn scraps of cuff—he felt very pleased with himself. He had mostly forgotten where he had been going, but he was going to pour the pile to her when his eye focused upon the brook. Ole Doc took his finger off the booster switch and grinned.

"That sure is green grass," he said with a pleased sigh. And then he looked up over the control panels where he hung his fishing rod.

Who knows what would have happened to Junction City if Ole Doc hadn't decided to go fishing that day.

Seated on the lower step of the port ladder, Hippocrates patiently watched his god toss flies into the water with a deft and expert hand. Hippocrates was a sort of cross between several things. Ole Doc had picked him up cheap at an auction on Zeno just after the Trans-System War. At the time he had meant to discover some things about his purchase such as metabolism and why he dieted solely on gypsum, but that had been thirty years ago and Hippocrates had been an easy habit to acquire. Unpigmented, four-handed and silent as space itself, Hippocrates had set himself the scattered task of remembering all the things Ole Doc always forgot. He sat now, remembering—particularly that Ole Doc had some of his own medicine to take at thirty-six o'clock—and he might have sat there that way for hours and hours, phonograph-record-wise, if a radiating pellet hadn't come with a sharp *zip* past his left antenna to land with a clang on the *Morgue's* thick hull.

ZIP! CLANG!

Page forty-nine of "Tales of the Early Space Pioneers" went smoothly into operation in Hippocrates' gifted unimaginative skull, which page translated itself into unruffled action.

He went inside and threw on "Force Field Beta" minus the Nine Hundred and Sixtieth Degree Arc, that being where Ole Doc was. Seeing that his worshiped master went on fishing, either unwitting or uncaring, Hippocrates then served out blasters and twenty rounds to himself and went back to sit on the bottom step of the port ladder.

The big spaceship—dented a bit but lovely—simmered quietly in Procyon's inviting light and the brook rippled and Ole Doc kept casting for whatever outrageous kind of fish he might find in that stream. This went on for an hour and then two things happened. Ole Doc, unaware of the Force Field, cast into it and got his fly back into his hat and a young woman came stumbling, panic-stricken, across the meadow toward the *Morgue*.

From amongst the stalks of flowers some forty feet high emerged an Earthman, thick and dark, wearing the remains of a uniform to which had been added civil space garb. He rushed forward a dozen meters before he paused in stride at the apparition

of the huge golden ship with its emblazoned crossed ray rods of pharmacy. Then he saw Ole Doc fishing and the pursuer thrust a helmet up from a contemptuous grin.

It was nearer to Ole Doc than to the ship and the girl, exhausted and disarrayed, stumbled toward him. The Earthman swept wide and put Ole Doc exactly between himself and the ladder before he came in.

Hippocrates turned from page forty-nine to page one hundred and fifteen. He leaped nimbly up to the top of the ship in the hope of shooting the Earthman on an angle which would miss Ole Doc. But he had no more than arrived and sighted before it became apparent to him that he would also now shoot the girl. This puzzled him. Obviously the girl was not an enemy who would harm Ole Doc. But the Earthman was. Still it was better to blast girl *and* Earthman than to see Ole Doc harmed in any cause. The effort at recalling an exact instance made Hippocrates tremble and in that tremble Ole Doc also came into his fire field.

Having no warnings whatever, Ole Doc had just looked up from disentangling his hook from first his shirt and then his thumb and beheld two humans cannonading down upon him.

The adrenalized condition of the woman was due to the Earthman, that was clear. The Earthman was obviously a blast-for-hire from some tough astral slum and he had recently had a fight for two knuckles bled. The girl threw herself in a collapse at Ole Doc's feet and the Earthman came within a fatal fifteen feet.

Ole Doc twitched his wrist and put his big-hooked fly into the upper lip of the Earthman. This disappointed Ole Doc a little for he had been trying for the nose. The beggar was less hypo-thyroid than he had first estimated.

Pulling his game-fish bellowing into the stream, Ole Doc disarmed him and let him have a ray barrel just back of the medulla oblongata —which took care of the fellow nicely.

Hippocrates lowered himself with disappointed grunts down to the ladder. At his master's hand signal he came forth with two needles, filled, sterilized and awaiting only a touch to break their seals and become useful.

Into the gluteal muscle—through clothes and all because of sterilizing radiation of the point—Doc gave the Earthman the contents of needle one. At the jab the fellow had squirmed a little and the doctor lifted one eyelid.

"You are a stone!" said Ole Doc. "You can't move."

The Earthman lay motionless, wide-eyed, being a stone. Hippocrates carefully noted the time with the fact in order to remind his master to let the fellow stop being a stone some time. But in noting the time, Hippocrates found that it was six minutes to thirty-six o'clock and therefore time for a much more important thing—Ole Doc's own medicine.

Brusquely, Hippocrates grabbed

up the unconscious girl and waded back across the stream with her. The girl could wait. Thirty-six o'clock was thirty-six o'clock.

"Hold up!" said Ole Doc, needle poised.

Hippocrates grunted and kept on walking. He went directly into the main operating room of the *Morgue* and there amidst the cleverly jammed hodgepodge of trays and ray tubes, drawers, masks, retorts and reflectors, he unceremoniously dropped the girl. Monominded now, for this concerned his master—and where the rest of the world could go if it interfered with his master was a thing best expressed in silence—Hippocrates laid out the serum and the proper rays.

Humbly enough the master bared his arm and then exposed himself—as a man does before a fireplace on a cold day—to the pouring out of life from the fixed tubes. It took only five minutes. It had to be done every five days.

Satisfied now, Hippocrates boosted the girl into a proper position for medication on the center table and adjusted a lamp or two fussily, meanwhile admiring his master's touch with the needle.

Ole Doc was smiling, smiling with a strange poignancy. She was a very pretty girl, neatly made, small wristed, high breasted. Her tumbling crown of hair was like an avalanche of fire in the operating lights. Her lips were very soft, likely to be yielding to—

"Father!" she screamed in sudden consciousness. "Father!"

Ole Doc looked perplexed, offended. But then he saw that she did not know where she was. Her wild glare speared both master and thing.

"Where is my father?"

"We don't rightly know, ma'am," said Ole Doc. "You just—"

"He's out there. They shot our ship down. He's dying or dead! Help him!"

Hippocrates looked at master and master nodded. And when the servant left the ship it was with a bound so swift that it rocked the *Morgue* a little. He was only a meter tall, was Hippocrates, but he weighed nearly five hundred kilos.

Behind him came Ole Doc, but their speeds were so much at variance that before the physician could reach the tall flowers, Hippocrates was back through them carrying a man stretched out on a compartment door wrenched from its strong hinges for the purpose. That was page eight of "First Aid in Space", not to wrestle people around but to put them on flat things. Man and door weighed nearly as much as Hippocrates but he wanted no help.

" 'Lung burns," said Hippocrates, "are very difficult to heal and most usually result in death. When the heart is also damaged, particular care should be taken to move the patient as little as possible since exertion—' "

Ole Doc listened to, without heeding, the high, squeaky singsong. Walking beside the girl's father, Ole Doc was not so sure.

He felt a twinge of pity for the old man. He was proud of face,

her father, gray of hair and very high and noble of brow. He was a big man, the kind of a man who would think big thoughts and fight and die for ideals.

The doctor beheld the seared stains, the charred fabric, the blasted flesh which now composed the all of the man's chest. The bloody and gruesome scene was not a thing for a young girl's eyes, even under disinterested circumstances—and a hypo would only do so much.

He stepped to the port and waved a hand back to the main salon. There was a professional imperiousness about it which thrust her along with invisible force. Out of her sight now, Ole Doc allowed Hippocrates to place the body on the multi-trayed operating table.

Under the gruesome flicker of ultraviolet, the wounded man looked even nearer death. The meters on the wall counted respiration and pulse and hemoglobin and all needles hovered in red while the big dial, with exaggerated and inexorable calm, swept solemnly down toward black.

"He'll be dead in ten minutes," said Ole Doc. He looked at the face, the high forehead, the brave contours. "He'll be dead and Adam's breed is gone enough to seed."

At the panel, the doctor threw six switches and a great arc began to glow and snap like a hungry beast amid the batteries of tubes. A dynamo whined to a muted scream and then another began to growl. Ozone and brimstone bit the nostrils. The table was pooled in smoky light.

The injured man's clothing vanished and with small tinks bits of metal dropped against the floor—coins, buckles, shoe nails.

Doc tripped another line of switches and a third motor commenced to yell. The light about the table graduated from blue up to unseen black. The great hole in the charred chest began to glow whitely. The beating heart which had been laid bare by the original weapon slowed, slowed, slowed.

With a final twitch of his wrist, Doc cut out the first stages and made his gesture to Hippocrates. That one lifted off the top tray which bore the man and, holding it balanced with one hand, opened a gravelike vault. There were long, green tubes glowing in the vault and the feel of swirling gases. Hippocrates slid the tray along the grooves and clanged the door upon it.

Doc stood at the board for a little while, leaning a little against the force field which protected him from stray or glancing rays, and then sighing a weary sigh, evened the glittering line. Normal light and air came back into the operating room and the salon door slid automatically open.

The girl stood there, tense question in her every line, fear digging nails into palms.

Doc put on a professional smile. "There is a very fair chance that we may save him, Miss—"

"Elston."

"A very fair chance. Fifty-fifty."

"But what are you doing now?" she demanded.

Doc would ordinarily have given a rough time to anyone else who had dared to ask him that. But he felt somehow summery as he gazed at her.

"All I can, Miss Elston."

"Then he'll soon be well?"

"Why . . . ah . . . that depends. You see, well —" How was he going to tell her that what he virtually needed was a whole new man. And how could he explain that professional ethics required one to forego the expedience of kidnaping and murder, no matter how vital it might seem. For what does one do with a heart split in two and a lung torn open wide when they are filled with foreign matter and ever-burning rays unless it is to get a new chest entire?

"We'll have to try," he said. "He'll be all right for now . . . for a month, or more perhaps. He is in no pain, will have no memory of this and if he is ever cured, will be cured entirely. The devil of it is, Miss Elston, men always advance their weapons about a thousand years ahead of medical science. But then, we'll try. We'll try."

And the way she looked at him then made it really summer. "Even . . ." she said hesitantly, "even if you are so young, I have all the confidence in the universe in you, doctor."

That startled Ole Doc. He hadn't been patronized that way for a long, long time. But more important—he glanced into the mirror, over the table. He looked more closely. Well, he *did* look young. Thirty, maybe. And a glow began to creep up over him, and as he looked back to her and saw her cascading glory of hair and the sweetness of her face—

"Master doctor!" interrupted the unwelcome Hippocrates. "The Earthman is gone."

Ole Doc stared out the port and saw thin twirls of smoke arising from the charred and blasted grass. The Earthman was gone all right, and very much gone for good. But one boot remained.

"Looks," said Ole Doc, "like we've got some opposition."

"We were proceeding to Junction City," said the girl, "when a group of men shot down our ship and attacked us."

Doc picked a thoughtful tooth for the fish he had caught had been excellent — deep-fried, Southern style. He felt benign, chivalrous. Summer was in full bloom. He was thinking harder about her hair than about her narrative. Robbery and banditry on the spaceways were not new, particularly on such a little inhabited planet as Spico, but the thoughts which visited him had not been found in his mind for a long long time. She made a throne room of the tiny dining salon and Doc harked back to lonely days in cold space, on hostile and uninviting planets, and the woman-hunger which comes.

"Did you see any of them?" he asked only to hear her voice again.

"I didn't need to," she said.

The tone she took startled Ole Doc. Had he been regarding this from the viewpoint of Volume 16 of Klote's standard work on human psychology he would have realized the predicament into which with those words he had launched himself. Thirteen hundred years ago a chap named Mallory had written a book about knight errantry, it had unhappily faded from Ole Doc's mind.

"Miss Elston," he said, "if you know the identity of the band then perhaps something can be done, although I do not see what you could possibly gain merely by bringing them to the Bar of the Space Council."

Hippocrates was lumbering back and forth at the buffet clearing away the remains of the meal. He was quoting singsong under his breath the code of the Soldiers of Light, "'It shall be unlawful for any medical official to engage in political activities of any kind, to involve himself with law, or in short aid or abet the causes, petty feuds, personal vengeances . . .'" Ole Doc did not hear him. The music of venus was in Miss Elston's voice.

"Why I told you about the box, doctor; it contains the deed to this planet and more important than that it has the letter which my father was bringing here to restrain his partner from selling off parcels of land at Junction City. Oh doctor, can't you understand how cruel it is to these people. More than ten thousand of them have come here with all the savings they have in the universe to buy land in the hope that they can profit by its resale to the Procyon Sirius Spaceways.

"When my father, Judge Elston, first became interested in this scheme it was because it had been brought to his attention by a Captain Blanchard who came to us at our home near New York and told us that he had private information that Spico was completely necessary to the Procyon-Sirius Spaceways as a stop over point and that it would be of immense value. Nobody knew, except some officials in the company, according to Captain Blanchard, and my father was led to believe that Captain Blanchard had an excellent reputation and that the information was entirely correct.

"Blanchard came to Spico some time ago and laid out the necessary landing fields and subdivided Junction City using my father's name and money. He circulated illustrated folders everywhere setting forth the opportunities of business and making the statement that the Spaceways would shortly begin their own installation. Thousands and thousands of people came here in the hope either of settling and beginning a new life or of profiting in the boom which would result. Blanchard sold them land still using my father's name.

"A short while ago my father learned from officials of the company that a landing field was not necessary here due to a new type

CARTIER

of propulsion motor which made a stop-over unnecessary. He learned also that Captain Blanchard had been involved in blue skys speculations on Alpha Centauri. He visio-graphed Blanchard and told him to cease all operations immediately and to refund all money, saying that he, Judge Elston, would absorb any loss occasioned in the matter. Blanchard told him that it was a good scheme and was making money and that he didn't intend to refund a dime of it. He also said that if my father didn't want himself exposed as a crook he would have to stay out of it. Blanchard reminded him that only the name of Elston appeared on all literature and deeds and that the entire scheme had obviously been conceived by my father. Then he threatened to kill my father and we have been unable to get in contact with him since.

"I begged my father to expose Blanchard to the Upper Council but he said he would have to wash his own dirty linen. Immediately afterwards we came up here. He tried to leave me behind but I was terrified that something would happen to him and so I would not stay home.

"My father had the proof that the Procyon-Sirius Spaceways would not build their field here. It was in that box. Blanchard has kept good his threat. He attacked us, he stole the evidence, and now—" she began to sob suddenly at the thought of her father lying there in that harshly glittering room so close to death. Hippocrates phonograph-record-wise was beginning the code all over again.

"'It shall be unlawful for any medical officer to engage in political activities of any kind, to involve himself with law, or in short aid or abet the causes, petty feuds, personal vengeances . . .'"

But Ole Doc's eyes were on her hair and his mind was roaming back to other days. Almost absently he dropped a minute capsule in her water glass and told her to drink it. Soon she was more composed.

"Even if you could save my father's life, doctor," she said, "it wouldn't do any good. The shock of this scandal would kill him."

Ole Doc hummed absently and put his hands behind his head. His black silk dressing gown rustled. His youthful eyes drifted inwards. He thrust his furred boots out before him. The humming stopped. He sat up. His fine surgeon's hands doubled into fists and with twin blows upon the table he propelled himself to his feet.

"Why, there is nothing more simple than this. All we have to do is find this Blanchard, take the evidence away from him, tell the people that they've been swindled, give them back their money, put your father on his feet and everything will be all right. The entire mess will be straightened out in jig time." He beamed fondly upon her. And then, with an air of aplomb began to pour fresh wine. He had half-filled the second glass when abrupt realization startled

him so that he spilled a great gout of wine where it lay like a puddle of blood on the snowy cloth.

But across from him sat his ladye faire and now that he had couched his lance and found himself face to face with an enemy, even the thought of the shattered and blackened remains of the Earthman did not drive him back. He smiled reassuringly and patted her hand.

Her eyes were jewels in the amber light.

Junction City was all turmoil, dust and hope. There were men there who had made a thousand dollars yesterday, who had made two thousand dollars this morning, and who avidly dreamed of making five thousand before night. Lots were being bought and sold with such giddy rapidity that no one could keep trace of their value. Several battered tramp spaceships which had brought pioneers and their effects lay about the spaceport. Rumors, all of them confident, all of them concerning profit banged about the streets like bullets.

Smug, hard and ruthless, Edouard Blanchard sat under the awning of the Comet Saloon. His agate eyes were fixed upon a newly arrived ship, a gold-colored ship with crossed ray rods upon her nose. He looked up and down the crowded dusty street where space boot trod on leather brogan and place-silk rustled on denim. Men and women from a hundred planets were there. Men of hundreds of races and creeds were there with pasts as checkerboard as history itself, yet bound together by a common anxiety to profit and build a world anew.

It mattered nothing to Edouard Blanchard that bubbles left human wreckage in their wake, that on his departure all available buying power for this planet would go as well. Ten thousand persons, whose only crime had been hope, would be consigned to grubbing without finance, tools, or imported food for a questionable living on a small orb bound on a forgotten track in space. Such concerns rarely trouble the consciences of the Edouard Blanchards.

The agate eyes fastened upon an ambling Martian named Dart, who with his mask to take out forty percent of the oxygen from this atmosphere and so permit him to breathe, looked like some badly conceived and infinitely evil gnome

"Dart," said Blanchard, "take a run over to that medical ship and find out what a Soldier of Light is doing in a place like this."

The Martian fumbled with his mask and then uneasily hefted his blaster belt. He squirmed and wriggled as though some communication of great importance had met a dam halfway up to the surface. Blanchard stared at him. "Well? Go! What are you waiting for?"

Dart squirmed until a small red haze of dust stood about his boots. "I've always been faithful to you, captain. I ain't never sold you out to nobody. I'm honest, that's what I am." His dishonest eyes wriggled

upwards until they reached the level of Blanchard's collar.

Blanchard came upright. There was a sadistic stir in his hands. Under this compulsion Dart wilted and his voice from a vicious whine changed to a monotonous wail: "That was the ship Miss Elston ran to. I'm an honest man and I ain't going to tell you no different."

"But you said she escaped and I've had twelve men searching for her. Dart, why couldn't you have told me this?"

"I just thought she'd fly away and that would be all there was to it. I didn't think she'd come back. But you ain't got nothing to be feared of, Captain Blanchard. No Soldier of Light can monkey with politics. The Universal Medical Council won't interfere."

Captain Blanchard's hands, long, thin, twisted anew as though they were wrapping themselves around the sinews in Dart's body and snapping them out one by one. He restrained the motion and sank back. "You know I'm your friend, Dart. You know I wouldn't do anything to hurt you. You know it's only those who oppose my will whom I . . . shall I say, remove. You know that you are safe enough."

"Oh yes, Captain Blanchard, I know you are my friend. I appreciate it. You don't know how I appreciate it. I'm an honest man and I don't mind saying so."

"And you'll always be honest, won't you, Dart?" said Blanchard, white hands twitching. He smiled. From a deep pocket he extracted first a long knife with which he regularly pared his nails, then a thick sheaf of money, and finally amongst several deeds, a communication which Mr. Elston had been attempting to bring to Spico. He read it through in all its damning certainty. It said that the Procyon-Sirius Spaceways would not use this planet. Then, striking a match to light a cigar he touched it to the document and idly watched it burn. The last flaming fragment was suddenly hurled at the Martian.

"Get over there instantly," said Blanchard, "and find out what you can. If Miss Elston comes away from that ship unattended, see that she never goes back to it. And make very certain, my honest friend, that the Soldier on that ship doesn't find out anything."

But before Dart had more than beaten out the fire on the skirt of his coat a youthful pleasant voice addressed them. Blanchard hastily smoothed out his hands, veiled his eyes, and with a smile which he supposed to be winning faced the speaker.

Ole Doc, having given them his "good morning", continued guilelessly as though he had not heard a thing.

"My, what a beautiful prospect you have here. If I could only find the man who sells the lots -"

Blanchard stood up instantly and grasped Doc Methuselah by the hand which he pumped with enormous enthusiasm. "Well you've come to the right place, stranger. I am Captain Blanchard and very

pleased to make your aquaintance Mr.—"

"Oh, Captain Blanchard, I have heard a great deal about you," said Ole Doc, his blue eyes very innocent. "It is a wonderful thing you are doing here. Making all these people rich and happy."

"Oh, not my doing I assure you," said Captain Blanchard. "This project was started by a Mr. Elston of New York City, Earth. I am but his agent trying in my small way to carry out his orders." He freed his hand and swept it to take in the dreary, dusty, and being-cluttered prospect. "Happy, happy people," he said. "Oh, you don't know what pleasure it gives me to see little homes being created and small families being placed in the way of great riches. You don't know." Very affectedly he gazed down at the dirt as though to let tears of happiness splash into it undetected. However, no tears splashed.

After a little he recovered himself enough to say, "We have only two lots left and they are a thousand dollars apiece."

Ole Doc promptly dragged two bills from his breast pocket and handed them over. If he was surprised at this swift method of doing business, Captain Blanchard managed to again master his emotion. He quickly escorted Ole Doc to the clapboard shack which served as the city hall so that the deeds could be properly recorded.

As they entered the flimsy structure a tall prepossessing individual stopped Blanchard and held him in momentary converse concerning a program to put schools into effect. Ole Doc, eying the man, estimated him as idealistic but stupid. He was not particularly surprised when Blanchard introduced him as Mr. Zoran, the mayor of Junction City.

Here, thought Ole Doc, is the fall guy when Blanchard clears out.

"I'm very glad to make your aquaintance Mr.—" said Mayor Zoran.

"And I yours," said Ole Doc. "It must be quite an honor to have ten thousand people so completely dependent upon your judgment."

Mayor Zoran swelled slightly. "I find it a heavy but honorable trust, sir. There is nothing I would not do for our good citizens. You may talk of empire builders, sir, but in the future you cannot omit mention of these fine beings who make up our population in Junction City. We have kept the riffraff to a minimum, sir. We are families, husbands, wives, small children. We are determined, sir, to make this an Eden." He nodded at this happy thought, smiled. "To make this an Eden wherein we all may prosper, for with the revenue of the Spaceways flooding through our town, and with our own work in the fields to raise its supplies, and with the payroll of the atomic plant which Captain Blanchard assures us will begin to be built within a month we may look forward to long, happy and prosperous lives."

Ole Doc looked across the bleak plain. A two-year winter would come to Spico soon, a winter in which no food could be raised. He

looked at Mayor Zoran. "I trust, sir, that you have reserved some of your capital against possible emergencies, emergencies such as food, or the cost of relief expeditions coming here."

Captain Blanchard masked a startled gleam which had leaped into his agate eyes. "I am sure that there is no need for that," he said.

Mayor Zoran's head shook away any thought of such a need. "If land and building materials have been expensive," he said, "I am sure there will be more money in the community as soon as the Spaceways representatives arrive, and there is enough food now for three weeks. By the way," he said, turning to Blanchard, "didn't you tell me that today was the day the officials would come here?"

Blanchard caught and hid his hands. "Why, my dear mayor," he said, "there are always slight delays. These big companies, you know, officials with many things on their minds, today, tomorrow, undoubtedly sometime this week."

Mayor Zoran was reassured and shaking hands with Ole Doc and Captain Blanchard strode off into the street where he made a small profession of his progress. People stopped him here and there and asked him eagerly for news.

Inside at the desk a small sleepy clerk woke up long enough to get out his records book, but, before the transaction could be begun, Ole Doc took back the two one thousand dollar bills.

"There are two or three things which I would like to know," said Ole Doc innocently. "I wonder if there are going to be schools?"

"Oh yes, of course," said Blanchard. "I didn't know that you were a family man."

"And will there be medical facilities?" said Ole Doc.

"Why yes, just this morning a ship of the Universal Medical Society landed here. It won't be long before they start work on the hospitals."

"But," said Ole Doc smoothly, "the Universal Medical Society does only research and major planning. Certainly they would not take cognizance of Spico."

"Well now, I wouldn't be too sure," said Captain Blanchard. "And besides we have the usual common run of physicians here, three of them."

Ole Doc repressed his "humph" at this and smiled. "Well, I suppose you know more about it than I do," he said. "But what about your water supply? Is it adequate?"

Here Captain Blanchard began to assume his most expansive and guileless pose and would have carried on for some time about the excellence of the water supply if Ole Doc had not interrupted him.

"You say you have three reservoirs already. Now, are these community owned or would it be possible to buy them?"

Captain Blanchard had not expected that morning that his stars would arise so luckily. His thin white hands began to twitch as though already plucking gold from the pockets of his victim. "But

this would require," said Captain Blanchard, "a great deal of money. Yes indeed, a great deal of money."

Ole Doc smiled as though this were an easy matter. "For the water company," he said, "I would be willing to pay a very reasonable amount."

The sleepy clerk was sleepy no longer. His eyes widened. Here he was observing the captains of industry at work.

"For, let us say, twenty thousand dollars," said Ole Doc, "I would be willing—"

"My dear fellow," said Blanchard, "Twenty thousand dollars would not be enough to buy the piping system which we have installed."

Ole Doc shrugged. "Then I suppose that's all there is to it," he said.

Captain Blanchard's hands did a particularly spasdomic bit of twitching. "Oh no it isn't," he said, "oh no indeed. I'm sure that we might be able to come to some sort of an understanding on this. Ah . . . perhaps forty thousand dollars—"

"No, twenty thousand dollars is all the cash I have," said Ole Doc.

"Why then this is very simple; if you give us your note of hand for, let us say, twenty thousand dollars at proper interest and cash to the sum of twenty thousand dollars, we can arrange the matter right here. I have the power of attorney you know to sign for all these things for Mr. Elston."

"Done," said Ole Doc, and felt himself seized immediately by the eager Blanchard who pumped his hand so hard that he nearly broke the wrist bones. The clerk was now thoroughly pop-eyed. And he was all thumbs and blots as he attempted to make out the papers for the transaction. But finally his difficulties were dispensed with and Ole Doc, signing the name of William Jones and paying across the proper sums and notes found himself the possessor, proud owner and manager of the water works of Junction City.

Blanchard seemed to be anxious to depart immediately and left Ole Doc to his own devices. For some hours the doctor wandered through the city looking in at the temporary dwellings, watching men struggle to raise out of second-hand materials livable or usable establishments. He patted children on the head, diagnosed to himself various diseases and deformities, and was generally a Haroun al Rachid.

Hope was the prevailing emotion and there was not a man there who did not consider himself a potential millionaire to such a degree that they were giving each other notes of hand payable thirty days hence to enormous sums. But so far as actual cash was concerned, from what Ole Doc could glean, there remained but a few dollars in the whole town. The rest, he correctly judged was safely drowned in the depths of Edouard Blanchard's safe. The town was restricted between a river and a ridge and every inch of ground between these natural boundaries was deeded to someone other than Edouard Blanchard

as Ole Doc, later in the afternoon, ascertained after a short session with the clerk. He was forced to waken the clerk several times during his inspection of the books. That gentleman was happily asleep when some of the ledgers not generally opened were closely inspected.

Ole Doc stood in the sunlight for a while, thoughtful, barely avoiding a blaster fight which broke out in a swill parlor. Finally he understood that Edouard Blanchard probably intended to leave the area for good before another dawn came.

Ole Doc had for some time been aware of shadowing of the *Morgue*. But before he went back to his ship he decided to take an unusual step.

This did not consume many minutes for there were only five space vessels in the crude port and

all of these had come from more or less regular runs amongst known systems. His business transacted he went back to the golden vessel.

That evening, after a pleasant dinner over which Miss Elston graciously presided, Ole Doc and Hippocrates left the ship on an expedition. They had reached the bottom of the ladder when Ole Doc turned to his slave.

"Hippocrates, over there on the left you behold some trees. Under them you will find a Martian. You will make a wide circuit and come up upon him while I distract his attention from in front. Without injury to the fellow you will hold him and make him prisoner. We will then put him away safely in the *Morgue* and go about our business."

Dart, squirming and shuddering a little bit in the cold, and perhaps with a premonition that he should not expect the evening to deliver anything but evil, suddenly felt himself struck solidly and expertly from behind. As he went down he half drew a blaster but there was no chance to use it. Dreaming peacefully of his beloved canals he was carried back to the ship and consigned to an escape-proof compartment.

In a businesslike way then Hippocrates picked up his burden and trudged after Ole Doc around the outskirts of the town toward the higher level of ground where the river had been diverted into three reservoirs which provided the water supply.

Hippocrates was under a double burden, the sack which he carried on his back and the burden which lay in his mind. As they made their way through the night, the heavy little being shaking the solid ground of Spico with every step no matter how light he intended it and Ole Doc regarding the stars with a musing eye, Hippocrates rattled off the code from start to finish. Then he began again. Soon, newer arguments for sanity occurred to him and and he started to quote at length:

On Woman

The stronger the woman
The safer the man
As he ventures afar
On the Spaces that span

For love may be lovely
In summer's soft haze
And days may be sweeter
When fond passions blaze

But far out on Astri
With light frying hot
Adventure can't live
When there's naught in the pot

Her sweet curling ringlets
Can't warm you at night
And the dew in her eyes
May but lead you to fight

No! Take woman stronger
Then Vega's bright blare
For then you live longer
Yea, live to get there!

(*Tales of the Space Rangers*)

Hippocrates finished this quotation with considerable satisfaction

which lasted only long enough to see that Ole Doc hadn't even heard it. He glumly subsided, despairing, for there was no mistaking the elasticity of Ole Doc's step, nor the softness of his eye.

It was a beautiful night. Spico's several moons made the ground iridescent and played in triangular patterns upon the reservoirs. Ole Doc was very cheerful. "Now there," he said, "dump a third of that sack in each one of these and back we'll go."

It was not until now that Hippocrates gave way to the most gloomy forebodings. He had seen Ole Doc busy with his tubes. He had seen this white powder gushing out into the sacks but he had not associated it with the population of Junction City. Even if his reasoning powers might be feeble it took no great effort on his part to see that Ole Doc fully intended to poison every person there. Hippocrates hesitated.

He was trembling, so great was the effort to disobey Ole Doc. He had no conversation to match his feelings about this. He could only look mutely, appealingly, and stand still.

"Go ahead," said Ole Doc. And then, focusing more closely upon his slave he suddenly realized that that being was considerably afraid.

Hippocrates tried to begin the Universal Medical Code once more but failed.

Although it greatly taxed his strength Ole Doc picked up the bag and began the task himself. The white powder went instantly into solution and one could see it spreading far out across the reservoir in the moonlight. When he had treated all three of the repositories he gave the empty sack back to Hippocrates. Such was the manner of the giving that Ole Doc's anger was clearly demonstrated in it.

All the way back to the *Morgue* Hippocrates lagged behind, head heavy against his barrel chest, gypsum tears dripping slowly onto his doublet. It was the first time Ole Doc had ever been angry with him.

The strains of various instruments and occasional shouts came on the night wind from the more lawless quarter of Junction City. Closer at hand a camp fire burned and about it clustered the flame-bathed faces of pioneers. They listened to a faint and plaintive Magri song which hung over them like some sad ghost of night.

Ole Doc passed close to the group but paused to listen to the woman who sang. In his present mood he could understand the notes if not the words of the melody. They called before his eyes the cascades of bright hair which he supposed waited for him over at the *Morgue*. A wind was blowing softly from Spico's white plains but there was a chill in it and those about the fire huddled closer. They listened in deeper silence.

An eager-faced young Earthman noticed Doc and made way for him in the circle. Doc stumbled against the hydrant which studded this as well as every other lot in Junction City. These people had no home he observed nor lumber with which

to build one. They were living instead on the bare ground using blanket screens to protect their dressing. There were several children sprawled even now outside the ring and one of them whimpered and a woman went to it.

The song was done and the young man offering his tobacco to Ole Doc said with a smile of camaraderie, "Where's your lot stranger? Close by?"

"Pretty close," said Ole Doc.

"How many in your party?" said the young man.

"Just myself and a slave."

A woman near by leaned over with a laugh, "Well, a young fellow like you," she said, "is going to need help when it comes to putting his house together. Why don't you come and help us and then when you get ready we'll help you?"

The young man laughed, several of the others joining in. "That's a fair bargain," he said. "There are fourteen of us and only two of you. That's a pretty good ratio."

The woman looked smilingly on Ole Doc. "We got to remember this is a new country," she said, "and that we're all neighbors. And that if we don't help each other out then we'll never make anything of it."

Ole Doc looked around. "I don't see any building materials here yet," he said.

The young man shook his head, "Not yet. We're looking around to find a job. It took what money we had to buy our passage and get the lot you're sitting on."

An older man across the circle joined in. "Well, according to Captain Blanchard, that atomic power plant should be going up any day now and then we'll all have work. If we don't build a palace first off, why I guess that can wait for a while. A solid roof is all I ask. This one we got now leaks." He looked up at the stars.

They all laughed and the old man who had just spoken, finding the strain too much for him began to cough. He did so alarmingly, as though at any moment he would spray his soul out on the ground before him. Ole Doc watched, eyes narrowed, suddenly professional. He stood up.

"You want to watch these cold nights old man," said Doc. He fumbled through his pockets but it was Hippocrates behind him who found what he sought. The small black kit had been stowed in his boot pocket.

Ole Doc took it out now and selected from it a very small but extremely potent pill. He skirted the fire and gave it to the old man.

"Take this and you'll feel better."

There was some question in the eyes about him and considerable reluctance on the part of the old man. For all beware the unhappy human frailty of trying to administer to everyone else's diseases.

"Go ahead," said Ole Doc, "I'm a physician."

The old man took the pill then and swallowed it.

"That ought to cure you in an hour or so," said Ole Doc, "And if you keep yourself dry and warm

your asthma shouldn't be coming back on you very soon."

There was renewed attention about the circle. "Well, by Saturn," said the old man, "I never heard of no pill that'd cure asthma in two or three hours. What kind of a doctor do you be?"

Unbidden, phonograph-record-wise Hippocrates was only too glad to answer this question. "'The Soldier of Light is no ordinary physician.'" he announced in his shrill voice. "'He is part of an organization of six hundred who have dedicated themselves to the ultimate preservation of mankind no matter the wars or explorations of space. There are one hundred and seventy-six trillion human beings throughout this galaxy. There is roughly one physician for every hundred and sixty of these. There are only six hundred Soldiers of Light. They give allegiance to no government, need no passport, so long as they do not engage in political activity, their persons are inviolate.

"'An apprenticeship of forty years is required to become a member of this society and membership is not confirmed even then until the applicant has made an undeniably great contribution to the health and happiness of mankind. Members of the Universal Medical Society do not practice as do ordinary physicians. They accept no fee. The organization is self-supporting.

"'You see before you my master, Soldier of Light seventy-seven known as Methuselah.'"

Before Ole Doc could stop them, all the members of the circle about the fire had risen to their feet and the men had uncovered their heads. Not one person there had failed to hear of the organization and several had heard of Ole Doc. None of them had ever before been privileged to behold a member of this awed and sacred society.

Embarrassed and a bit out of patience with his faithful slave Ole Doc left hurriedly. He was angry within himself in the realization that it was he himself who was at fault for he had never attempted to educate Hippocrates into intrigue. He doubted that anyone could possibly impress upon the fellow that Ole Doc could or would do anything which could not be published on every visio-screen in the galaxy. True, there had been some peccadillos in the past but this was before the time of Hippocrates. However, for all his good intentions, he could not bring himself to address the slave in friendly terms and so walked on harshly ahead of him.

Hippocrates, disconsolate, outcast the second time dropped far behind and finally sat down on a stone beside the path to try to exude his misery into the night and so be rid of it.

By himself Ole Doc reached the ship. He was all the way into the dining salon before he fully recognized the fact that it was empty. Miss Elston was gone.

At first he thought she might have gone out to take a turn in the night but then the piece of paper,

icy white on the salon table, told him this was not the case. It was in Miss Elston's handwriting.

Please do not try to find me or come for me. I am doing this of my own accord and I have no wish to get you into trouble knowing very well that you could be cast out of your society for engaging in political affairs.

Alicia Elston

Ole Doc read it through twice, trembling. Then throwing it savagely into the corner he dashed to the cabinet where he had enclosed Dart. That worthy was gone. Belatedly he bethought himself that the Martian might well have had his pocket radio phones concealed about him.

The cabinet containing Elston, being unknown, was, of course, undisturbed.

From a locker Ole Doc grabbed a blaster, fifty rounds and a medical case. Still buckling it on he ran across the field where the *Morgue* stood. He headed straight for the building where he had that day seen Blanchard.

Blanchard's white hands fluttered in the night gesticulating before the face of the tramp rocketship captain. Now they threatened, now they pleaded, now they rubbed thumb against fingers in the money sign but whatever they did the hard bitten old master of the spaceship remained adamant.

Dart squirmed and wriggled nervously as he regarded the odds in the form of five armed spacemen which they faced.

The captain stood sturdily on the lower step of the air lock and grimly shook his head. "*No*, Mr. Blanchard, I can't do anything like that. I gotta yella ticket, I tell ye. I can't clear until it's turned white by him that wrote it."

"But I tell you again and again," cried Blanchard, "that I can get a physician here in Junction City who'll give you a white ticket that will get you through any planetary quarantine you face."

"Naw sir, you ain't no regular port and if there's disease to be carried I ain't carryin' it. *Nawthing* can make me go up against a yella ticket signed by a Soldier of Light."

Sudden intelligence shot through Blanchard's face. His hands stiffened, clenched. "How can this be? When did it happen?"

"Just afore sundown, Mr. Blanchard. He come here and he give me the ticket and he give everybody else the same yella ticket. And while he didn't say *wot* disease, and while he didn't even say there *was* disease a yella ticket from a Soldier of Light is good enough for me. I don't go nowhere and I don't take you nowhere, and there's no use askin' it cause I'd make myself and my crew an outlaw for all the rest of my days if I was to do it. There ain't no planetary port anywhere in the galaxy that'd receive us with a yella ticket from him."

Anger displayed the extent of Blanchard's defeat. "I can show you there is no disease," he cried wildly. Then, bethinking himself that a more proper frame of mind

would better suit his ends he calmed.

"How could you get rid of such a thing as a yellow ticket? Supposing the Soldier of Light himself were to be stricken by the disease? Supposing he were to die? Then what? Supposing any number of things happened? Supposing Junction City burned down? Supposing, well, you can't stand there and tell me that you would then refuse to leave."

"Oh, that would be different, Mr. Blanchard. But them conditions ain't nowise appeared. While there's a Soldier of Light alive and well and as long as I holds his yella ticket I don't go no place. There's no use offering bribes and there's no use using threats. *I ain't going!*"

The space door shut with a clang.

If Blanchard's eyes had been acetelyne torches they would have cut it neatly through but they were not. He and Dart followed by three outlaws, who carried amongst them a quantity of baggage and a peculiarly heavy chest, made their way back towards the Comet Saloon.

They had not gone nearer than the outskirts of the town when they encountered two pioneers at one of the innumerable water hydrants which Blanchard had used as props to give stability to his swindle.

They had just drunk when one of them said, in a sour voice, "Look at that sky. Goin' to rain, all right."

Blanchard glanced up. The fine brilliance of the stars was not marred by a single cloud anywhere.

"Rain," said the other pioneer, "it'll probably hail or sleet. I never saw a worse lookin' night!"

"My old woman," said the first, "she'll probably die if it turns cold. She's doin' awful poor."

"And you never saw ground," said the second, "harder to dig a grave in."

This gloomy dissertation caused Blanchard to walk faster. The soft turf yielded, the night was fine. But there was chill in the wind which was not temperature. A lot depended upon the state of mind of these people.

Near the river he paused and let the three carriers come up. They jostled to a halt in the starlight.

"Men," said Blanchard, "I expect there's going to be a little trouble."

This did not amaze the three or bother them. They had been spawned in trouble. Their mental reaction was that Blanchard could be shaken down for a little more now. Not so Dart. He shifted his mask uneasily and mopped behind it with a silk cloth and squirmed. He felt rivulets of perspiration running inside his mailed jacket and yet he was chilly.

"Dart and I," said Blanchard, "have a task to perform, after which we will get a white ticket for the captain back there. The three of you leave your baggage at this point and go to the saloon. We will join you."

"What'll we do with this chest?" said one. He looked at the river.

There were muffled beatings

coming from within it now. It was true that someone might come near it and investigate.

Blanchard waved a careless hand. "Make sure she's silent and then throw her in. Things are too complicated now for any part of that." He motioned to Dart and went on.

The three opened the chest and stood for a moment looking down at Alicia Elston.

Dart felt the chill deepening into his brittle bones as he slithered after his master. He looked out at the stars which winked and glared and saw, suddenly, that all this immensity was small indeed. Hardly a livable planet in this galaxy remained where a Soldier of Light had not trod. A thin, luminous wheel faintly beckoned—but it was difficult to get passage on an inter-

galactic ship. Passports, money, time. And a man with a slave passport such as his would not get far. The very stars seemed to be crowding against him, pressing into his skull. He clawed suddenly at his mask for his breath was quick, and the abrupt flood of oxygen into his lungs made his pointed ears shrink and ring and the path before him blurred.

Blanchard cursed him as he stumbled and would have said more except for the hum of voices, hive-like, which came from the main section of the town. Uncertainly, Blanchard paused. He hesitated for some time at the edge of the field where stood the *Morgue,* rubbing his sweating palm against the butt of his blaster. The hum increased and there were angry shouts.

Pointing at the crude landing tower beside them, Blanchard ordered Dart up, watching his slave intently.

From the top, Dart viewed the town square and held on hard.

"Well?" yelled Blanchard.

"It's a big mob!" Dart shouted back. There was hysteria in his voice. "That Soldier is up there on a platform talking to them! He's got a portable speaker but I can't hear—"

A renewed and savage howl came from the town, blotting Dart's words. Blanchard started across the field to the *Morgue.*

He scouted the big ship for a moment and then boldly, with past familiarity, wrenched open the port and went into the main control section. His eyes scanned the walls until they found the long-range weapon rack. He wrenched a missile thrower from its clamps and fitted its telescopic sight upon it. A moment later he was back at the landing tower and climbing.

His white fingers trembled as they gripped the hewn crossbars, for he was well aware of the crime he contemplated and all that it might involve. But his fingers did not tremble when he leveled the missile thrower and there was only bitter calculation in his eye as he gazed through the scope, into the lighted square.

Ole Doc's image wavered in the glass and then steadied. The finder against height registered six hundred and eighty meters. The sight whined for an instant and then flashed green. As the sight opened again, the entire square leaped into the widened, spotter field and the black light of the sight itself came back with all images clear and close.

There was a crash of fire against the pillar on Doc's right and he reeled. Sprays, like orange plumes, radiated down into the crowd and slammed men and women to earth. The material of the platform began to burn and at its base small green puffs bloomed where the dust was burning.

With considerable pride, glowing with the pleasure of good marksmanship, Blanchard looked long at the motionless figure of the doctor about whom fire shoots began to sprout, first from the planking and then from his clothes.

Dart's hysterical tugging brought Blanchard away from the sight. The slave was gesturing at the river which lay on their right.

Bright starlight showed on two bodies which bobbed there, traveling evenly in the quiet current. A moment later a third crossed the light path of an enormous star. The grisly trio hovered together in an eddy as though holding a ghostly conference and then, having decided nothing, drifted casually apart and traveled on.

"A drunken brawl," said Blanchard. And he would have gazed again at the square except that he was almost dislodged by Dart's fleeing down the tower with such violence that even his slight weight shook it. He was screaming shrilly.

Blanchard's nerves were grating already. His anger flashed after the running slave. It was all too clear that Dart had broken before this crime's importance. And a broken slave—

Throwing the missile weapon to his hip, Blanchard shot at the running Martian. He tossed flame before the slave but Dart bolted on. Clicking the action over to automatic, Blanchard sprayed guts of fire around and about the escaping man. But the recoil of the weapon was such that the last blast was directed more nearly at the zenith than at the runner.

Dart, however, had been hit. He was running still but his course was erratic and shortly brought him back into a pattern of fires the weapon had made. He stumbled out of this but now his clothing burned. He stopped, tore in agony at his mask. His screams were punctuated by the slaps of the tenacious mouthpiece against his lips. He turned once more and fell heavily into a fire, sending green drops hurtling up about him. The flames flared, smoke rose, and then no longer fed, the fire gutted down and went out.

Blanchard's hands were trembling as he reached for the crossbars to swing down from the landing tower. He was not without a sense of loss, and for a moment he was appalled at the manner he had handed death to one who, while he might have been cowardly, had at least been loyal. More than this he was shocked by his own lack of self-control, a shock which was doubled by a sickness he felt at being so far thrown out of orbit with his plans.

He reached the ground and, for a moment, hesitated. But the heaviness of his cash lined pockets and the knowledge that so far he had triumphed gave him courage. He took a deep breath of the cold night and then, with renewed assurance, reloaded his missile weapon and looked about him.

It was not until then that an idea struck him. He crouched a little as though buffeted by the renewed yells coming from the center of town. His gaze swept across the field to the *Morgue*. A white ticket? What did he need of a white ticket?

He laughed in a sharp bark. There were guns on the *Morgue*. Ray disintegrators. And while the ship would have been bested in a

battle with a major naval vessel, few transports would be so well armed. And even if the ship had no guns, one could stand her on her tail above this town and the other vessels in the port and leave not one scrap of anything to tell the systems other than that space pirates had evidently been at work.

The yells seemed louder. But without a glance back, Blanchard sprinted to the *Morgue*. A Soldier of Light. Well, few would question the occupant of the ship and many were the dismal planets where one could jettison such as she and buy another for half the currency that would be aboard her.

It was for an instant only that Blanchard regretted the way in which he had been forced into doing things for which a man could be enslaved and sent to the hells forever. Elston had been his scapegoat. And a good one, for Elston was dead. But even then Blanchard doubted that any blame would be attached to anyone now except the inevitable space pirates to which the System Police always assigned blame for those crimes which otherwise were never solved. And in ten minutes this corner of Spico would be subject to certain chain reactions caused by either guns or tubes.

He ran past Dart—or the charred thing which had been Dart—and, so vividly was Blanchard seeing everything, he noted that the Martian's salametal tag was glittering brightly. Blanchard paused and tore off his own. There could as easily be two men in that ash pile as one. His identification tag clinked against Dart's.

Starting up again he ran on toward the door of the *Morgue*, gleaming palely golden in the starlight.

"Blanchard!"

Despite himself he whirled, missile weapon at ready. He froze. Halfway between the landing tower and himself a man came running.

"Blanchard!"

He knew that voice. He now saw the man. It was Ole Doc! His clothing was charred, his left arm was held up by a belt. But it was Ole Doc. And behind him swarmed a dark cloud of people.

With a hasty shot, Blanchard made his pursuer dodge. In an instant Blanchard had gained the port. Cursing he brought it to and then raced into the control section. Somewhere a door clanged.

Throwing the gun down Blanchard grabbed for the panel where the starting levers and throttles stood waiting. One set was marked chemical for departure and landing on a port. The other set was marked atomic. It was the second that he thrust full ahead to "start." In about ten seconds there would be the beginning of the fission.

"Blanchard!"

About the ship the mob swung, many of them passing by the tubes.

Mayor Zoran yelled to some of the men to force ports of the ship and two Centauri men launched their heavy bulks into the task. Somebody in the crowd yelled to

keep clear of the tubes and there was an immediate swing to give them berth.

Several pocket torches appeared and turned ship and field into blazing daylight. People gaped up at the golden ship or yelled encouragement to the two Centauri men who were still working at the spaceport. A little boy managed to climb up to the top of the vessel and with great initiative went to work with a slingshot handle prying up the emergency entrance hatch. People noticed him and howled encouragement at him. His father bellowed at him for a moment trying to get him to come down and then, realizing he had a hero on his hands, began to point and tell people it was his son. The boy vanished into the ship and there was an immediate scream from several women who had just realized that Blanchard might be in there, still alive, after killing Ole Doc.

At this the Centauri men renewed their efforts and bent several iron bars into pretzels working on the door. Suddenly it gave way, but not through their efforts. The little boy had opened it from the inside, but when a horde would have bounded through it, the child barred their way with a shrill yell of protest. A moment later the effort withdrew hastily.

But it was not the boy who had turned them. Charred and battered and breathing hard after great exertion, Ole Doc filled the spaceport. He was holding a small blaster in his right hand and smoke idled up from its muzzle. He became conscious of it and thrust it into his holster.

The startled silence suddenly burst. From three thousand throats volleyed a spontaneous cheer, a cheer which beat in great waves against the ship, almost rocking it. The enthusiasm fled out from the field and smote against the surrounding hills to come back redoubled and meet the new, louder bursts which sprang up amid tossed hats.

Ole Doc was trying to say something but each attempt was battered back and drowned in the tumult. Finally, when he had for the fifth time raised his hand for silence, they let him speak.

"I want to tell Mayor Zoran—"

There were new cheers for Mayor Zoran and he came forward.

"Tell your people," said Ole Doc, "that their money is safe."

There was bedlam in answer to this.

"You had better," said Ole Doc when he could again speak, "drain your water systems, all the reservoirs. I . . . well -Just drain them and don't drink any more water until you do."

They cheered this, for they would have cheered anything.

When he could talk, Ole Doc called for Hippocrates. But no Hippocrates answered. People went off eagerly looking for the doctor's slave but there was no instant result.

Finally Ole Doc thanked them and put the little boy outside and, despite many yells for reappearance, kept the spaceport firmly closed.

Still, there was much to talk about and the crowd, half hopeful that Ole Doc would come back, hung about the ship. Some space rangers found the ashes and the two identification tags and rumors began to fly around that it hadn't been Blanchard who had gone into the ship. New waves of pessimism went through the crowd. If that was Blanchard there, in the ashes, then what had happened to the money. Maybe it had been burned with Blanchard. People began to drift back to the ship and scream for Ole Doc to come out again.

Several lost interest and recalling the doctor's admonition to drain the reservoirs, followed the lead of a local common physician who sought some reflected glory and went off to do what they were told.

But those who remained were suddenly stricken in their tracks by the sound, peculiarly fiendish and high-pitched, of a dynamo within the ship. They first mistook it for some wail of a savage beast and then identified it. Shortly afterwards lights began to arc in the midship ports and so brilliant was their flare that they sent green, yellow and red tongues licking across the field and lighted up the rows of attentive faces near at hand.

Other dynamos began to cut in and the golden ship vibrated from bow to tubes. There were some who held that she was about to take off and so went well back from her but others, more intelligent, found in these weird manifestations no such message—nor any message at all—and so hung about in fascination.

It was the little boy, hero of the earlier episode, who again adventured. He climbed up to the emergency entrance hatch which was still open and started to climb down.

Within the instant he shot forth again, his face ghastly in the torches. He came stumbling down the hull ladder and collapsed at its foot. One hand on the last rung kept him from sinking to the ground and in this position he was ill.

Eager people crowded about him and lifted him up, volleying questions at him. But the child only screamed and beat at them to be let go. When he was finally released he sped nimbly past the crowd and sought sobbing comfort in his mother's arms.

Rumors began to double, then. There were those in the crowd who held that some devil's work was afoot inside that ship. Others hazarded the wild theory that it had not been the doctor at all who had come to the spaceport, but Blanchard in the doctor's clothes. Others began to retell mysterious and awful things they had heard about the Soldiers of Light, doctors whom no one knew, who were too powerful to be under any government. Somebody began to say that the System patrol cruisers should be informed and shortly an authoritative youth, a radioman on one of the spaceships in the other port, walked away to send the message, promising a patrol ship there before morning.

With this new stimulous reaching out, people of the town began to cluster back around the ship in great numbers and there were many ugly comments in the crowd. Finally Mayor Zoran himself was called upon for action and he was pressed to the fore where he rapped imperiously upon the spaceport of the *Morgue*.

The weird screaming dynamos whined on. The lights flashed and arced without interruption. An hour went by.

People remembered then something they had heard about Soldiers of Light, that it was enough to be banished for them to interfere with politics anywhere. This convinced them that something violent should be done to the man in that ship and blasters began to appear here and there and a battering ram was brought up to force the door. Nobody would risk the emergency port.

The difference between the loud whinings within and the sudden silence was so sharp that the battering ram crew hesitated. In the silence ears rang. Crickets could be heard chirping near the river. No one spoke.

With a slow moan, the spaceport opened from within. Bathed in the glare of half a hundred torches, a gray-haired, noble visaged man stood there. He looked calmly down upon the crowd.

"My friends," he said, "I am Alyn Elston."

They gaped at him. A few came nearer and stared. The man appeared tired but the very image of the pictures on all the literature.

"I am here, my friends, to tell you that tomorrow morning you shall have all your money returned to you or shall be given work on certain projects I envision here—and will finance—as you yourselves may elect. I have the money with me. I need the records and I am sure morning will do wonderfully well. However, if any of you doubt and can show me your receipts I shall begin now—"

They knew him then. They knew him and their relief was so great after all their suspicions and worries that the cheers they sent forth reached twice as far as those they had given Ole Doc. The rolling thunderbolts of sound made the ship and town shiver. Men began to join hands and dance in crazy circles. Hats went skyward. They cheered and cheered until there was nothing to their voices but harsh croaks. And this called for wetness and so they flooded into the town.

They carried Elston on their shoulders and hundreds fought with one another to clasp his hand and promise him devotion forever.

In a very short while they would let him speak again. And he would speak and they would speak and the available supply of liquors would run low indeed in Junction City.

Back aboard the *Morgue*, had they not been so loud, had sounded a strange series of thumps and rattles which betokened the disposal in the garbage disintegrator of certain superfluous mass which had

been, at the last, in the doctor's road.

And now, quietly, palely, the real and only hero of the affair, utterly forgotten, worked feebly on himself, trying to take away the burn scars and the weariness. He gave it up. His heart was too ill with worry. He stumbled tiredly toward his cabin where he hoped to get new clothes. Near the spaceport he stopped, struck numb.

Hippocrates was standing there and in the little being's four arms lay cradled a burden which was very precious to Ole Doc. Alicia Elston's bare throat stretched out whitely, her lips were partly opened, her bright hair fell in a long, dripping waterfall. About Hippocrates' feet spread drops of water.

Doc's alarm received a welcome check.

"She is well," said Hippocrates. "When I walked along the riverbank I found three men taking her from a chest. I killed two but the third threw her in the river. I killed the third and threw them in but walked for many minutes on the river bottom before I found her. I ran with her to the nearest spaceship and there we gave her the pulmotor and oxygen. I made her lie warmly in blankets until she slept and then I brought her here. What was this crowd, master? What was all the cheering?"

"How did you come to find her?" cried Ole Doc, hastily guiding his slave into a cabin where Alicia could be laid in a bed and covered again.

"I . . . I was sad. I walked along the river. I see better at night and so saw them." But this, obviously, was not what interested Hippocrates. He saw no reason to dwell upon the small radar tube he had put in her pocket so he would not have to go over two square miles of Junction City at some future date when Ole Doc wanted a message sent to her. There were many things he did which he saw no reason to discuss with an important mind like Ole Doc's.

Disregarding the joy and relief and thankfulness which was flooding from his master, Hippocrates stood sturdily in the cabin door until Ole Doc started to leave.

"I don't know how I can ever—"

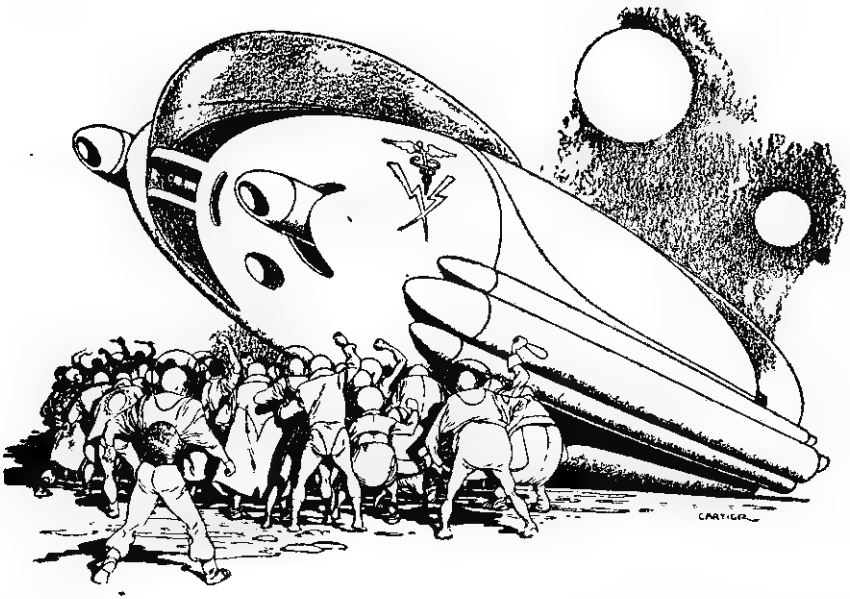
Hippocrates interrupted his thanks.

"You have Miss Elston, master. The spaceways are wide. We can go far. By tomorrow morning it will be known that a Soldier of Light has entered social relations and politics. By tomorrow night the System Patrols will be looking for us. By the next day your Society will have banished us or called us to a hearing to banish us. It is little time. We have provisions to leave this galaxy. Somewhere, maybe Andromeda, we can find outlaws and join them—"

Ole Doc looked severely at him.

Hippocrates stepped humbly aside. He cast a glance at the woman he had saved and at his master. He saw that things would be different now.

It was a bright morning. Dawn came and bathed the *Morgue* until



every golden plate of her gleamed iridescently. The grass of the field sparkled with dew and a host of birds swooped and played noisily in the rose and azure sky.

Junction City stirred groggily. It scrubbed its eyes, tried to hide from the light, scrubbed again and with aching heads and thick tongues arose.

No comments were made on the revel. The Comet Saloon was shut tightly. Blanchard's house swung its doors idly in the wind. But no one commented. Everyone stumbled about and said nothing to anyone about anything.

So passed the first few hours of morning. People began to take an interest in existence when a System Patrol cruiser swung in and with a chemical rocket blast settled in the main spaceport.

Hippocrates, sweeping the steps of the port ladder, looked worriedly at the newcomer and then threw down his broom. He rolled into the main salon where he knew Ole Doc was.

Opening his mouth to speak three successive times, Hippocrates still did not. Ole Doc was sitting in an attitude of thought from which no mere worldly noise ever roused him. Presently he rose and paced about the table. He paid no heed whatever to Hippocrates.

Finally the small being broke through all codes. "Master, they are coming! We still have time. We still have time! I do not want you to be taken!"

But he might as well have addressed the clouds which drifted smoothly overhead. With long paces the doctor was walking out a

problem. His appearance was much improved over last night for all burns had vanished the night before and the arm was scatheless. However, it lacked days until treatment time and the rule never varied. Ole Doc looked a little gray, a little worn, and there were lines about his mouth and in the corners of his eyes.

Once he walked to a cabinet where he kept papers and threw back a plast-leaf and looked at a certificate there. He stood for a long time thus and finally broke off to stand in the doorway of Alicia's cabin where the girl still slept, lovely, vital and young.

Hippocrates tried to speak again. "We can take her and the ship still has time. They have not yet come into the town to get reports—"

Ole Doc stood looking sadly at the girl. His slave went back to the spaceport and stared at the town.

A little wind rippled the tops of the grass. The silver-plated river flowed smoothly on. But Hippocrates saw no beauty in this day. His sharp attention was only for the group of System officers who went into the town, stayed a space and then came out towards the ship, followed by several idlers and two dogs and a small boy.

Rushing back to the salon, Hippocrates started to speak. His entrance was abrupt and startled Alicia, who now, dressed and twice as lovely as before, stood beside Ole Doc at the file cabinet.

"Master!" pleaded Hippocrates.

But Ole Doc had no ears for his slave. He saw only Alicia. And Alicia had but scant attention for Hippocrates; she was entirely absorbed in what Ole Doc had been saying. It seemed to the little slave that there was a kind of horror about her expression as she looked at the doctor.

Then Ole Doc opened up the plast leaf and showed her something there. She looked. She turned white and trembled. Her gaze on Ole Doc was that of a hypnotized but terrified bird. With an unconscious movement she drew back her skirt from him and then steadied herself against the table.

"And so, my dear," said Ole Doc. "Now you know. Pardon me for what I proposed, for misleading you."

She drew farther back and began to stammer something about undying gratitude and her father's thanks and her own hopes for his future and many other things that all tumbled together into an urgent request to get away.

Ole Doc smiled sadly. He bowed to her and his golden silk shirt rustled against his jeweled belt. "Good by, my dear."

Hastily, hurriedly she said good-by and then, hand to throat, ran past the slave and down the ladder and across the spaceport to town.

Hippocrates watched her go, looked at her as she skirted the oncoming officers and started toward a crowd in the square which seemed to be listening to an address by her father. The cheers were faint only by distance. Hippocrates scratched

his antenna thoughtfully for a moment and then turned all attention to the oncoming officers. He bristled and cast a glance at the blaster rack.

"Hello up there!" said a smooth, elegant young man in the scarlet uniform of the System Patrol.

"Nobody here!" stated Hippocrates.

"Be quiet," said Ole Doc behind him. "Come aboard, gentlemen."

The idlers and the small boy and the dogs stayed out, held by Hippocrates' glare. The salon was shortly full of scarlet.

"Sir," said the officer languidly, "we have audacity I know in coming here. But as you are senior to anyone else . . . well, could you tell us anything about a strange call from this locale? We hate to trouble you. But we heard a call and we came. We had no details. Five people, fellow named Blanchard and his friends, ran away into the country or some place. But no riot. Could you possibly inform us of anything, sir?"

Ole Doc smiled. "I hear there was a riot among the five," he said. "But I have no details. Just rumor."

"Somebody is jolly well pulling somebody's toe," said the languid young man. "Dull. Five men vanishing is nothing to contact *us* about. But a riot now." He sighed at the prospect and then slumped in boredom. "No radioman aboard any ship here sent such a message, they say, and yet we have three monitors who heard it. Hoax, what?"

"Quite," smiled Ole Doc. "A hoax!"

"Well, better be getting on." And they left, courteously and rather humbly refusing refreshment.

It was a very staggered little slave who watched them go. The small boy lingered and gazed at the ship as though trying to put a finger on something in his mind. He was a very adventurous boy. He frowned, puzzled.

"Man child," said Hippocrates, "do you recall a riot?"

The little boy shook his head "I . . . I kind of forget. Everybody seems to think maybe there should have been one—"

"Do you remember anybody named Blanchard getting killed?" thrust Hippocrates, producing a cake mystically from the pantry behind him.

"Oh, he didn't get killed. Everybody knows that. He ran away when Mr. Elston came."

"You remember a Soldier of Light addressing a crowd last night?"

"What? Did he?"

"No," said Hippocrates, firmly. "He was not out of this ship all day yesterday nor last night either." And he tossed down the cake which was avidly seized.

Hippocrates stomped back into the salon.

He did not know what he expected to find, but certainly not such normality. Ole Doc was playing a record about a fiddler of Saphi who fiddled for a crown and, while humming the air, was contentedly fill-

ing up a cuff with a number of calculations.

With a gruff voice, Hippocrates said, "You poured powder in the water to make everyone forget, to be angry and then forget. And its worn off. Nobody remembers anything. Mr. Elston and Alicia have promised not to speak. I see it. But you should have told me. I worried for you. You should have told me! Nobody will ever know and I was sick with what would happen!"

Ole Doc, between hums, was saying, "Now with the twenty thousand that I got back, and with what is in the safe, I have just enough to cruise to . . . da, dum, de da . . . yes. Yes, by Georgette, I shall!" He threw down the pencil and got up, smiling.

"Hello Hippocrates, old friend," said Doc, just noticing him. "And how are you this wonderful noon? What will you fix me for lunch? Make it good, now, and no wine. We're taking off right away for Saphi. We're going to buy us a complete new set of radiotronic equipment there and get rid of all this worn out junk." He stopped, staring: "Why you're crying!"

Hippocrates bellowed, "I am not!" and hurriedly began to clear the table to spread out the finest lunch ever set before the finest master of the happiest and most won-back slave in the galaxy. In a moment or two, exactly imitating the record which had stopped, he was singing the "Fiddler of Saphi," the happiest he had been in a very, very long time.

During lunch, while he shoved new dishes about on their golden plates, Hippocrates took a moment to glance, as a well informed slave should, at the certificate which had made that horrible, detestable woman so gratifyingly scared

The aged, carefully coated and preserved parchment brown and spotted with mildew from some ancient time even so surrendered very little information to Hippocrates. It merely said that the University of Johns Hopkins on some planet named Baltimore in a System called Maryland wherever that might be—did hereby graduate with full honors one Stephen Thomas Methridge as a physician in the year of Our Lord Nineteen Hundred and Forty-Six Anno Domino.

Even if this *was* seven hundred years ago that Ole Doc first learned his trade, what of that? He knew more than any doctor graduated in the best school they had today.

Well, good riddance, though just why she should so disapprove of that school was more than Hippocrates could figure out.

He sang about the "Fiddler of Saphi" and forgot it in the happy scramble of departure.

THE END.

BY GEORGE O. SMITH

PROBLEM IN SOLID

***Three-dimensional** movies might be more interesting than at first expected—particularly to the police force. And what a Grade A prime headache for a law court!*

Illustrated by Orban

Martin Hammer should have been prepared for anything. As the world's foremost producer of motion pictures, he should have taken any situation from earthquake to fatherhood without a qualm or a turned eyebrow. But Hammer had not seen everything —yet.

A noise presented itself at Hammer's office door. Not the noise of knocking or tapping, nor even the racket made by attempts to breach the portal with a heavy blunt instrument. It was more like the sound of a dentist's drill working on wood, or perhaps one of those light burring tools, or maybe even a light scroll saw.

Then, with all the assurance in the world, a man's hand came through the door, the fingers clenched about an imaginary doorknob. The hand swung an imaginary door aside and as it moved, the wood of the real door fell to

the floor in a pile of finely-ground sawdust.

Once the imaginary door was thrust aside, the rest of the intruder entered, leaving the exact outline of his silhouette in the door.

He smiled affably and said, "I trust I'm not intruding!"

He was still holding the imaginary door open with his right hand. As he finished speaking, he stepped forward a step, turned, pulled the imaginary door shut a few inches, transferred it to take the inside knob in his left hand, and then stepping carefully forward, he thrust the imaginary door closed, his hand clenched around the imaginary knob. The act ended as his hand entered the real doorknob and there was the high-pitch whine of metal against metal like cutting a tin can with a bandsaw.

The intruder turned, walked across the office, and stood there in front of Martin Hammer. From a pocket he took a cigarette and a match and lit up, blowing a cloud of fragrant smoke into the air.

"I am delighted to meet you," he said.

At which point, Martin Hammer blew up.

He had been patient. He had been astounded. He had been sitting there with his chin getting lower and lower and lower as this . . . this character walked through his door with all the assurance in the world. Then the bird had the affrontery to behave as though he had not invaded Hammer's office; had not ruined a fine oak door; and as though Hammer should have been glad to see him.

What added fuel to Hammer's explosion was the fact that the intruder seemed absolutely unaware of the ruination of the door.

"What the —" yelled Hammer. He leaped to his feet, ran around his desk, and faced the intruder angrily for only an instant.

Hammer launched himself at the intruder with intent to do bodily harm, mayhem, and perhaps a little bit of second-degree murder that might be juried into justifiable homicide.

He did not connect. The stranger disappeared at that instant, and Hammer's well directed blow fell upon thin air. Hammer, finding no resistance before him, fell flat on his face, which mashed the cigar into his mouth and burned a hole in his fine Persian carpet. He turned over and sat up, spitting out bits of tobacco mixed with equal parts of very bad language. Blankly he ran his hand through the spot where the stranger had been.

"Now," he said in puzzlement, "what in the name of—"

"May I apologize?" came a voice at the door. Hammer whirled and saw the intruder again, standing there with a rather dumfounded expression on his face.

Hammer grunted. At least he is now cognizant of his ruin-production, he thought. This was true. The intruder no longer had that fatuous expression that ignored the damage.

"Apologize?" exploded Hammer.

The intruder stepped through the ruined door. "I got the focus wrong," he said, "otherwise the image could have—"

"Image?" yelled Hammer.

The stranger nodded. "Image," he said. "Look, Hammer, you don't really think that I actually walked through that door, across your office floor, and then disappeared into thin air, do you?"

"Well . . . and who are you?"

"My name is Tim Woodart. I'm an engineer."

"Look," said Hammer shakily, "I'd like to know what's been going on. As a producer of motion pictures, I am beginning to see the glimmerings of a fine idea. I sort of resent the destruction you've created, but it certainly carried off its point."

"I'll bring in the gear, too," said Woodart. "If you don't mind."

Hammer nodded. Whatever it was, Martin Hammer had just had his door broken in by the first of all true three-dimensional photography!

Harry Foster stood on a lonely stage and smiled at some mythical point in the mid distance. Dramatically he pointed, and as he pointed, across his face there came a change over his features. Normally handsome, Harry Foster's "bad" face was thrice as bad for the distortion into hatred. It was excellent acting.

The man beside the camera nodded. It was not only excellent acting but it was rather emotionally troublesome to be confronted by a living, breathing image of yourself. You, watching you do something that you had done previously.

Harry Foster's hand stole up alongside of the cutoff button and he thrust it down viciously.

The scene stopped instantly and disappeared.

Foster, remaining beside the camera, swore. He rereeled manually a few yards and restarted the camera. He caught a previous scene's ending: a beautiful woman smiling shyly at another man. The scene's ending was brief, to a flash-over of Harry Foster standing in the center of the stage, and going through the same motions of smiling offstage, with the features changing from smile to scowl of hate.

Again Foster's hand flipped the switch and the image of Foster disappeared as did the settings on the stage.

Foster swore again. "There must be some way — How does he do this anyway?"

Foster opened the cabinet-like side of the solid camera and looked at the circuits. They were enigma to Foster, but there was some logic to it—there must be. You create an image and then wipe it away to make place for the next image—just as in common cinema. But in normal cinema it is possible to halt the film and project a still. That's what Harry Foster wanted—

He pulled a single tube from one circuit and snapped the camera on. The stage was blank. He replaced the tube and tried another tube removed by some distance from the

first. He started the camera, and the stage flashed into being once and then went blank again. There was a tiny flash from the bottom panel of the machine and Foster looked down to see the indicator of a blown fuse.

Foster nodded. Obvious. To stop the wipe away would mean that the next frame would be placed on top of the first. A double exposure would not work in the solids. Not without repealing that law of nature that states that two things cannot occupy the same space at the same time.

What he had to do was to stop the projector at the same time he stopped the wipe-away. Tim Woodart had fixed the machine so that the wipe-away completed the scene after stopping the works. Just a matter of safety.

Foster puzzled over the machine and restarted it again. He waited until the image of Harry Foster stared off stage and then he grabbed two tubes and jerked them out simultaneously.

The projector stopped; the scene remained. The image of Harry Foster stood there dumbly. Then it turned vaguely and looked at the camera and the man beside it.

"Hello, hero," sneered Foster.

The image blinked. "I've wondered what might happen," said the spurious Foster.

"Yes," chuckled the real Foster, "we have, haven't we?"

"I—," started the image, but he stopped and looked wildly around. "What do you want?"

"You know."

"I'll not do it! You . . . we . . . ah . . . well, it's no go."

The real Harry Foster sat down in the director's chair. "I've had more time to plan," he said. "You're just an image—"

Foster snarled back, "Not now I'm not. I'm just as real as you are!"

"I'm the original; you came out of that camera."

"Someone is going to have a time proving it," replied the image Foster.

"Yeah," drawled the real Foster, "that's what I'm counting on!"

From within his coat, Foster took a revolver. Holding it on his image, Foster replaced the tube and watched the scene resume, with a third Foster going through its paces. He snapped off the camera and the set disappeared, leaving the bare stage. He wiped his fingerprints from the place and then nudged the image Foster with the revolver.

"Out," he snapped, pointing with the gun barrel.

They went —in a death march.

A half hour later, the real Foster handed his image a drink. "Drink deeply," he said sarcastically. "You needn't be afraid to die—you never lived, you know."

The image Foster shook his head. "I've been alive as you have!"

The real Foster lifted his revolver and snarled: "We can put a stop to that!" He fired thrice and each shot slammed into Foster's stomach driving the man back against the wall. He crumpled, finally.

Then Harry Foster took a look around the living room of his apartment, shrugged, and left, tossing the pistol into a corner.

Lieutenant Miller looked down at the corpse. "Someone sure hated him," he said.

The man in the business suit nodded. "They had reason to," he said. He was Jacobson of the F.B.I. "Too bad. I'd rather he were legally punished."

"Me, too."

"What about his wife?"

"She's in the next room. Which reminds me—"

Lieutenant Miller went to the door and looked in quietly. "Look, fellows, just establish her. Don't bother grilling her."

Sergeant Mullaney looked up in surprise. Miller nodded. "This is one case I'm not going to kill myself solving," he said. "I just want to be certain that the murderer of Harry Foster isn't as obvious as a stone pillar on the corner of Hollywood and Vine. Is Mrs. Foster clear?"

Mullaney nodded. "Spending the whole evening with a friend."

"Friend corroborate it?"

Mrs. Foster smiled wanly. "She will if asked," she said.

Miller nodded. "My only regret, Mrs. Foster, is that his insurance will just about cover his embezzlements. The rest—"

"I wouldn't touch it—or him—with a ten-foot pole," she blazed.

Jacobson met Miller at the door. "He got around," he said. "Blackmail, embezzlement, and outright

larceny. There's been talk of drug-peddling and white slave traffic. Why or how the bird managed to be such a thorough stinker and still maintain his position here I'll never tell you."

Miller looked at the coroner, who was just polishing up his job. Miller said, "Whoever did it did Foster a favor. Between you and me, we'd have had him between nutcrackers in another week."

Jacobson nodded. "Couldn't have been suicide?"

Miller shook his head. "After filling himself that full of lead, he was too dead to toss that gun. Furthermore, he was shot from greater than arm's distance. No," said Miller, "someone 'done him in' and should possibly be commended. Plain case of: 'Too bad, thank God!'"

Martha Evers watched her image on the stage in the studio theater. Beside her was Martin Hammer who was watching the performance with interest. Martha was watching with wonder; Hammer had seen this thing at work before and was more concerned with the technical portions of the opus than the wonder of watching a life-sized, living, breathing, talking image perform.

On the other side of Martha Evers was Tim Woodart, who was just watching. He was more or less out of a job since professional photographers had taken over the job of making the performance.

"But how is it done?" she asked him.

"Same like any other of its kind," smiled Tim.

"But there isn't any other."

"Television is, sort of," he said. "Anyway, there is a three-way scan taking in the volume to be reproduced. Each atom in the original has its own characteristic charge and mass; this charge and mass is registered. When the reproducer replaces the real people with the image, the same scan forms real atoms where the real atom was in the original. The follow up scan wipes the atom clear to make room for the next frame."

"How about this building atoms?" puzzled the girl. "Doesn't that make for radioactivity?"

"Uh huh," he said, "but the radioactivity is really energy that we use to operate the machine."

The scene on the stage switched to a close-up of Martha and the picture's villain, one Jack Vanders whose leer was known across the continent.

The woman on the other side of Tim Woodart stood up and called "Cut it!" in a low contralto

The stage cleared in a twinkle and the lights went up.

Martin Hammer leaned across the seats and spoke to the standing woman. "What's wrong, Mrs. Foster?"

"That won't do," she said. "Bad shot!"

Hammer thought for a moment. "There's nothing wrong with a close-up," he said. "It's done daily."

Jenny Foster smiled. "Yes," she agreed, "the screen fills up from

top to bottom with the face, and the eyes look softly into the camera lens as the girl murmurs, 'I love you' and it is effective because in the two-dimensional cinema, the trick of looking into the camera lens makes it appear as though the girl were gazing softly into your own eyes—no matter where you are in the theater. But this is solid, Hammer. When the gal looks at you, I can tell that she's looking at you from here."

"So?"

"So I'm resentful of the guy who has the preferred seat," she said.

Martin Hammer smiled. "You can't have all the seats in the theater within a two-foot circle," he said. "But there must be some way to lick it."

"You'll remember what I had to say?" she asked.

Hammer nodded. "We'll work on it," he said. "Like all other media, solid performances require their own techniques. But until we locate the techniques, people will take to solids for their novelty."

They all sat down. Mrs. Foster turned to Tim Woodart and asked him how it was done.

"You mean the whole thing?"

"No, the job of making enlargements."

"Easy," he said. "We just have a repeat-scan that repeats the same atom in between true signals. Same like cramming a whole twelve-story building on a busy street. We cut out certain patterns—sometimes every other signal, sometimes every third, sometimes four out of five are eliminated in the recording. The number cut is a definite statement of the 'times-size' of the reproduction."

"Sounds simple when you say it fast," she smiled.

"I'll tell you about it later—?" he suggested.

"I'd like that."

He was too silent for a moment, and Jenny Foster knew it. "Tim," she said, "if you're worrying about the . . . the—"

"Well," he admitted slowly, "I was. Not that I care, but you—?"

She smiled bitterly. "It's often said that no one knows another person until you've lived with them for some time. It was between our first meeting and three years after I married Harry Foster that I was his wife. That was when I found out about him. I—"

"Look," said Tim, worriedly, "there's been something worrying me ever since we took these shots yesterday. Now I know what it is. Let's get out of here and I'll buy you a drink."

"*Shhhhhh!*" insisted Hammer.

"Stop it," returned Woodart.

"Make notes," said Hammer. "I want to see these rushes to the close."

"But—"

"But nothing. Tell me later."

"Let's go," said Tim plaintively.

"It'll only be a minute. What are you worrying about?"

Tim looked at the stage. This was a comic shot. In it, the head of the butler filled the stage and looked out at the audience through half-closed eyes. A middle distance shot previously had shown

the butler taking a sniff of pepper, this was the aftermath—

"No!" yelled Woodart.

He was too late. His yell was covered by the explosive sneeze. A hurricane of wind blasted at the tiny theater. A window went out in back, and Martin Hammer's toupee left for Kansas.

As the echoes died, Tim Woodart said, "That's what I meant."

Hammer blinked. "I'd hate to pull an Alfred Hitchcock and have a .45 pointed at the audience—close-up."

Back of him, the photographer looked at the stage and made a quick estimate. "That," he said, "would hurl a nine-foot slug of lead at the audience!"

Tim Woodart left quietly.

Tim Woodart led Jenny Foster to a small table and ordered Martinis. Jenny smiled at him and said: "Tell me how you came to invent this thing?"

"Easy," he grinned. "I'm an avid reader of science-fiction and there was a yarn in one of the leading magazines some time ago that dealt with a matter transmitter. Written by a crackpot electronics engineer by the name of George O. Smith. He was rather explicit in a vague sort of way, but it gave me the initial idea, and here we are with it!"

She laughed. "Is this character going to get any royalty?"

"Oh," said Tim Woodart expansively, "I offered him some, but he refused, saying that his idea was nothing but a fiction idea and that any bright engineer would know how to send matter by radio."

"Oh."

"Besides, he's in Philadelphia, now, and the men in the white coats wouldn't let him write with anything but a blunt crayon."

"Well, could you send things by wire with it?"

Tim smiled. "Not at present," he said. "There isn't a transmission line with a broad enough band-pass to accept the signal frequencies necessary."

"Now," said Jenny, taking a sip of her Martini, "you're getting in way over my head."

Tim Woodart pulled out pencil and paper, but Jenny stopped him by laying a gentle hand on his. "Don't," she said plaintively. "I don't even know what happens when I snap on the light switch, let alone understanding transmission lines."

Uncertainly he replaced the pencil and paper in his pocket. Then he laughed. "Shall we dance?"

"That," she told him, "I understand."

They danced and they danced well together. And while they were getting better acquainted, a hundred miles to the south a man was stopped by a motorcycle policeman for traveling too fast.

"Name?" snapped the policeman.

"Harold Farman."

"Driver's license?"

"Why . . . er . . . I—"

"No license?"

"Well, it's here. But—"

The policeman nodded. "Gimme," he snapped.

Harry Foster cursed himself for forgetting. For even trying to run under an assumed name without changing every bit of evidence. But the policeman looked rather rough, and Harry handed over the license.

"This says 'Harry Foster'," grunted the cop.

"I'm Harry Foster."

"That wasn't the name you gave me," said the cop pointedly.

"Look, officer, I'm about to meet a young lady we're meeting at the Border to marry in Mexico. Her father objects, and he's influential enough to send out word that I'm to be picked up on some pretext and held. That's why."

The officer nodded sensibly. "Sounds reasonable," he said, "and logical, and just about as silly as the usual guy who tried to elope."

"Well—thanks, officer. And may I bet you fifty that today is Sunday?"

"Today's Tuesday," replied the officer.

"My goodness," said Foster in surprise. "I lose, don't I?" He handed the officer a folded fifty. The officer took it and smiled dryly.

"You lose," he told Foster, "because so far as I know, there's a Lieutenant Miller of the Los Angeles police that has a dragnet out for Harry Foster—the motion picture hero!"

"Now look—"

"I've looked," said the cop, "and you're it. Will you come quietly or will you come horizontal?"

Harry Foster laughed. "I'm not *that* Harry Foster," he said.

"No?"

"No."

"And how am I going to tell?"

"Call Miller. I happen to know that the moving picture star died not more than a few days ago."

"That," said the policeman, closing his book, "is something that we can check but quickly. You'll come along while we check it, though."

"I'll come," said Foster cheerfully.

He went. The policeman called. Miller gave him the right answer, that the wanted man, Harry Foster, had been buried within the week. No, there was no mistake. The dead man's identity had been established to the satisfaction of every interested agency. The F.B.I. and the local police had seen to it that the dental work checked, fingerprints, everything including visual identification by friends, enemies, wife, and business associates.

Harry Foster left a short time later with an internal grin. He—was dead. Ergo—he could not be punished!

He laughed wildly as he resumed his driving, but his driving was less wild. There was a thoughtful quality about it.

At the Mexican Border, Harry Foster stopped for rest and while resting he read the newspaper. It carried the usual run of gossip columns, and in one of them Harry Foster saw and read with growing interest:

The widow of Harry Foster, whose body was found on the evening before the authorities were to have closed in on his nefarious activities, is finding solace in the company of Tim Woodart, who is

the inventor of Hammer Productions' new play technique. No one would deny Jenny Foster her right to happiness, and we'll cheer her on—

Foster crumpled the paper craftily. Woodart was about ready to start banking checks in six or seven figures, and—

Harry Foster left the restaurant and headed back toward Hollywood.

The locomotive thundered across the stage at a forty-five degree angle, filling the theater with a wave of heat and a puff of smoke and steam. Then it was past and gone, and its string of cars rumbled out of "offstage" to the right rear to the "offstage" at the left-front corner. It slowed and stopped, and the porter and passengers emerged; the principal players of the scene appeared and went through their action.

"Now that," said Hammer, pleased, "is a right good scene."

"Y'know," smiled Jenny Foster, "people are going to be so surprised to see the real thing come roaring across the stage that they're going to forget a couple of rather irrelevant items like having their heroine's head nineteen feet in diameter."

"Yeah," drawled Hammer, "and tell the crook to shave closer. A close up of Jack Vanders looks like a pincushion with telephone poles shoved in. Didn't know hair could be so big!"

"What bothers me," smiled Martha Evers, "is where I drink that Manhattan in the close-up. Darned drink must be all of twenty-three gallons."

"That isn't the main trouble with that scene," objected Vanders cheerfully. His saturnine face was only for selling purposes; a more pleasant villain was seldom to be found "What bothers everybody is that you can smell the odor of that drink, it's so big. Half of the would-be sots in the audience are going to be as dry as the Sahara by the time Evers gets it down."

Martha laughed. "Hammer is a great one for realism," she said, "but I hope he doesn't insist on a real slug of cyanide in the poisoning scene. I hate to think of twenty gallons of cyanide!"

"No doubt," laughed Hammer. "But what we ought to do is to have Woodart fix up some way of stopping that thing during close-up. We could start with a normal Martini and end up with fifty gallons."

Woodart shook his head. "Cost twenty times as much liquor itself," he said with a good natured smile. "You see, the energy that keeps this thing in balance comes from the wipe-out of the previous scene. Stop it that way and your light bill heads for the ceiling."

"O. K.—it was just an idea."

Vanders faced the group. "Look," he said. "I'm a professional villain, and all villains are supposed to want something for nothing and finding out that it can't be did."

Woodart agreed.

Then the scene changed to an overhead shot of Cincinnati. Taken by helicopter, the scene was an

angle shot down across Fountain Square towards the river. In the cinema such shots do not seem bizarre, but in solid, the street with its teeming cars and pedestrians was tilted at an angle; the angle between street and camera remained as it was, and the camera, of course, became the projector which was in the back of the theater.

The "eye" zoomed down and the street grew in size until the fountain that gave the Square its name was in plain view. It seemed incongruous that the water in the fountain came out at an odd angle to gravity and fell back at another odd angle, yet this was not a running reproduction of Fountain Square but a swift series of instantaneous reproductions and the droplets of water like everything else was replaced in whatever relative position it was, regardless of the facts of true gravity.

The scene tilted flat, finally, and traveled along the street on the level until the principal character was approached, whereupon the action began. The camera followed Jack Vanders into a bar where he met Martha Evers and ordered the Manhattan that was to become Gargantuan in size –

Jenny Foster put her face up for a good night kiss, and then shoved her apartment door open as Tim turned to leave. Inside, the living room light was on, and Jenny instantly called Tim back.

"Someone," she said, pointing to the lights.

"O K." he said, entering before her. Sprawled in Jenny's easy-chair was—

"Foster!"

"Who—me?" asked Foster in surprise. "Foster's dead."

"Can it," snapped Woodart. "And talk!"

"Or else?" drawled Foster indolently.

"Or else," snarled Woodart.

"Or else what?"

Tim went to the telephone and dialed the number of the police force.

"Don't bother," said Harry Foster. "I'm . . . Foster, that is, is dead."

Tim replaced the telephone. "What's the gag?" he demanded.

"I," said Foster hollowly, "am a ghost returned to plague mine unfaithful wife."

"The hereafter is going to have a moaning ghost with a shanty on its eye," said Woodart ominously. "Unfaithful wife my foot. If ever she—"

"Now that's been the big bone of contention," smiled Foster. "Foster gave her no grounds, and she was too good to give me any. And Foster gave her none because it is still impossible to have a wife testify against her husband."

"Very sly of you."

"Of Foster."

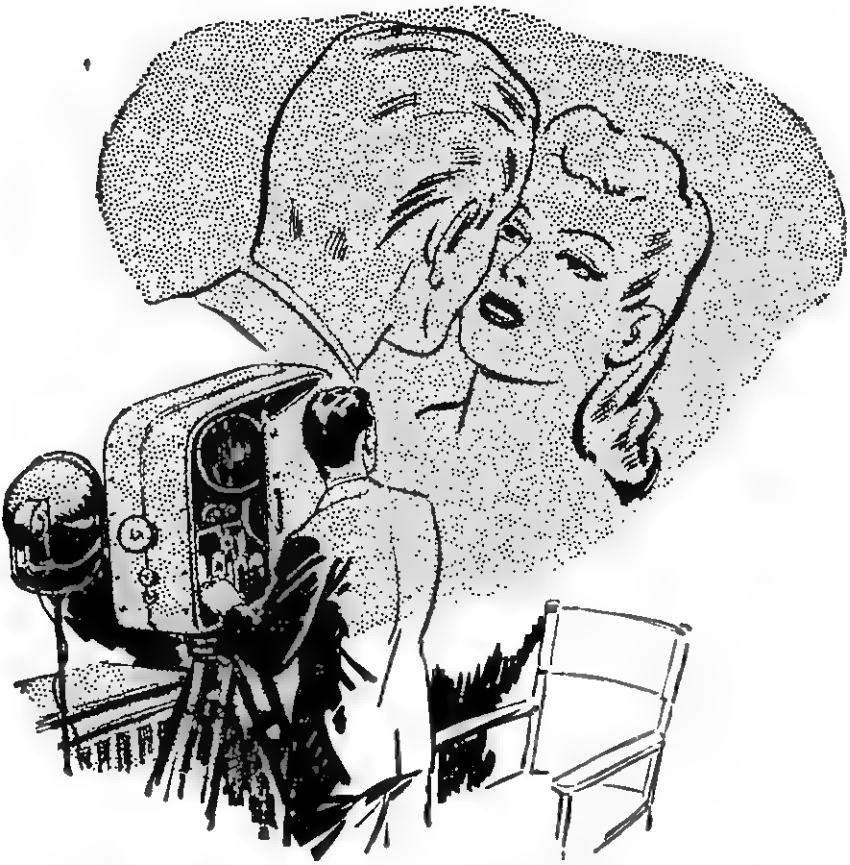
"You're Foster!"

"Me? No. Foster's dead."

Jenny gave a weak cry of despair. "What do you want?" she asked.

"How much have you got?" asked Foster pointedly.

"Blackmail," snarled Woodart.



"Why no. Not at all."

"You name it."

"It need have no name. You see, Woodart, I've learned that I no longer need the protection of the legality that prevents a wife from testifying against her husband. Her husband is dead."

"So?"

"Well, it isn't blackmail to perform a service for someone."

"Meaning?"

"Divorce comes high," explained Foster pointedly.

"After which—if done—you could continue to ask for more," said Woodart angrily. "You could threaten to prove that you were paid to get the divorce, a mere matter of blackening the character of a woman whose only error was being blind enough to take a second look at you."

"Your ingenious mind is too complex," said Foster quietly.

"May I point out that if you are dead, you are dead, and therefore—"

Foster laughed nastily. "Legally and physically, Harry Foster died and was buried. Legally there is nothing that could possibly prevent you from marrying her if you wanted to. But you see, Woodart, my wife is a completely moral woman, to say nothing of ethical. Though it is legal, there is still the gnawing doubt in her that she is compounding a felony—bigamy."

Jenny made a plaintive gesture, "I'll wait until he asks me—"

But she was not heard. Tim Woodart snorted. "So you think they'll be hesitant about punishing a dead man?"

"What do you think?"

Woodart strode forward and took Foster by the lapels of his coat, gathered them into one hand, and lifted the crook out of the easy-chair with an angry shake. "Then they can't book me for assault and battery upon the person of a corpse," he gritted. His free hand came back and forth across Foster's face, driving the heel's head from side to side. Then Woodart shoved him back, letting go of the lapels and using that hand to bury itself to the wrist in Foster's midsection. As Foster folded forward, Tim straightened him up with an upward chop to the jaw.

Foster crumpled, and Woodart lifted him by the collar and dragged him to the door, hurling him into the hallway. Foster turned, wiping blood from his face, and spat like an angry cat.

"That'll cost you, punk," he snarled.

Woodart laughed.

"Laugh," leered Foster. "You can't bring suit for divorce against a dead man, either!"

Harry Foster opened the door to his apartment and nodded quite genially. "Come in, gentlemen," he said overpolitely.

State attorney Jones was less cordial, and Lieutenant Miller was harsh.

"You're Harry Foster."

"I am. Strange coincidence, isn't it?"

"Coincidence my—"

"Be careful," warned Foster. "You wouldn't want to insult a citizen, would you? It might go hard with you."

"You're Harry Foster."

"I am."

"Then who was the man that was buried?"

"That is the coincidence," said Foster sorrowfully. "He was another Harry Foster. I understand that he was a rascal and definitely needed killing."

"Where were you when that deed was done?"

"Me? Look, sir, am I under suspicion?"

"Could be."

"Then produce your warrant! I shall take no guff from you nor any of your ilk."

"Take it easy," said Jones. "An innocent man has nothing to fear."

"An innocent man," said Foster, "has plenty to fear. Scheming politicians and courts who like to see convictions. Also there is the protection of the Constitution of the United States that grants me the

right to do as I please so long as I am lawful about it."

"It also grants us the right to protect other people," said Lieutenant Miller. "As for a warrant, we have a search warrant plus the fact that we know that murder was done in this apartment not more than two weeks ago."

"You're in," said Foster. "And you may leave as soon as you can. I'll not detain you."

"You know," said State attorney Jones, "this man answers the description of the man who is wanted for any number of assorted crimes from forgery to grand larceny. In every way he fills the bill. I think we will arrest you, Mr. Foster."

"You'll be sorry. This is false arrest."

"Indeed. In this country, all arrests are false arrests because it is a statement of intent that all men are innocent until proven guilty by a court of justice! Ergo, we take you into custody whether innocent or guilty and we will permit the judgment of the court to decide your status. Coming quietly—or would you prefer to resist arrest?"

Lieutenant Miller looked eager. "Please resist," he said clenching his fist.

"Unclench it," snapped Foster. "You touch me and I'll prove that you wantonly and brutally attacked an innocent victim without provocation."

"I've provocation enough," snarled Miller. "My sister—"

"Your sister suffered deeply at the hands of this blackguard Harry Foster," said Foster oilily. "But because he resembled me and wore my name is no logical nor lawful reason for identifying your hatred of him against me. That is a psychopatic failing, Lieutenant Miller."

"I'd like to make a pathological mess out of you," snapped Miller.

"Mr. Jones, you will remember that threat," said Foster. "As State attorney, it is your duty to protect the innocent."

Jones closed his lips over hard teeth and said nothing. He would have enjoyed the job of protecting Foster against a hungry hyena.

Foster went with them, but his manner was not that of a dangerous criminal who had been apprehended It was that of a man who knows all the answers.

"The defendant, Harry Foster, is charged with Murder in the First Degree," said State attorney Jones. "This is a strange case, gentlemen of the jury. It is without precedent, and, therefore, your action will establish a precedent. I charge you to consider not only the case at hand and to try it with the utmost regard to justice, but to remember, as you are considering the evidence to be presented, that this is but the first of many cases that will certainly follow. I—"

"I object! The defendant is on trial, not the Judicial System of the United States!" shouted Defense attorney Cranshaw.

Judge Carver said, "The objection is sustained. Strike that from the record."

Jones turned to the Court. "Your Honor, I request that my statements

about the establishment of precedent be retained."

Carver nodded. "It is true that this case will establish a precedent. Yet the trial at hand is the only thing of importance."

"I accept," replied Jones, and returned to the jury.

"I will attempt to show that the defendant did produce a living duplicate of himself after which he killed the duplicate. I call for my first witness the inventor of the device, Timothy Woodart."

Tim came to the stand and was sworn. There was considerable questioning to establish the qualifications of the witness, during which Cranshaw said to Foster. "This will be a thin case, Foster. Yet, if we can establish a reasonable doubt, the result will be an acquittal."

"Thin nothing," laughed Foster. "Just tie 'em up as I told you!"

"All right," replied Cranshaw uncertainly. "But it will be like arguing on one side for part of the time and then switching sides in the middle."

"What do you care so long as we win?"

"I don't," grinned Cranshaw. "Listen — Woodart is starting to give pertinent testimony."

"Mr. Woodart," asked Jones, "is it possible for your device to be stopped at such a time as to leave a complete set?"

"Yes," said Woodart.

"And you've known this all along?"

"Naturally. I invented it."

"Then the device is essentially a duplicating device?"

Woodart nodded. "It is, but like all such devices, it requires power. The laws of conservation of matter and energy make it impractical to produce a myriad of devices from a recording."

"And why is the device practical for the production of panoramic entertainment?"

"The initial power is expended in producing the first replica of the original scene," said Woodart, "after which, the scene is obliterated, which returns the power to the equipment for the construction of the next frame. Aside from the conversion losses and basic inefficiencies, the thing is then self-supporting."

"In other words, if it takes a kilowatt to establish one frame, that kilowatt is returned to the equipment?"

"Yes," said Woodart, "though the power is more on the order of a hundred thousand kilowatts."

"As the main party involved with the equipment, it is your duty to see that it is kept in operating condition?"

"Yes."

"Then tell us, Mr. Woodart, at any time since the device was initiated has there been any expenditure of great power that was unaccounted for?"

"There was."

"And your analysis?"

"On the night of May 18th the power demand meter showed the expenditure of seventy thousand kilowatts. It is my opinion that—"

"I object! That is an opinion, not a fact!" exploded Cranshaw.

Jones smiled. "Counsel will admit that it is the opinion of a very qualified man."

"I want it understood that this testimony is but an opinion!"

"Objection noted," said Judge Carver. "Proceed, Mr. Jones."

Jones nodded at Woodart. Woodart continued—

"My opinion is that during the night, someone established a single frame of the opus we were working on. Once this single frame was established, the person removed from the set one object, after which he wiped the stage clean, returning that to the equipment as power but without the object which accounts for seventy thousand kilowatts of energy."

"Mr. Woodart, is there any correlation between this power and the Einstein Formula?"

"No. The matter is not made—manufactured. It is converted. The energy represents the power required to carry the matter from a storage place to the stage. It is somewhat like lifting a weight to a certain height. There is no correlation between the foot-pounds of energy expended in such and the mass-energy of the stone. However, in lifting a stone, the energy expended in lift will be returned when the stone is let down—excepting that part which is removed from the total while the stone is held in midair."

"Then it might be difficult for you to determine just what was removed from the set?"

"It might be," said Woodart, looking hard at Harry Foster.

"That is all, Mr. Woodart." To the jury, Jones said: "I think you will find that the testimony just given will prove that duplication is possible. My next witness will show just who was duplicated. I now call Lieutenant Miller to the stand."

"Lieutenant Miller, when you came to the apartment of Harry Foster, what did you find?"

"I found Harry Foster, dead of gunshot wounds."

"And what else?"

"A revolver."

"And?"

"The revolver was in a far corner of the room," said Miller. "The dead man could not have used it upon himself for numerous reasons, even though the only fingerprints on the weapon were unmistakably those of Harry Foster. One reason is the distance between the body and the weapon; the wounds produced instant death. Another reason is that the dead man's right hand was in his coat pocket—clenched around a duplicate of the revolver."

"You can establish the authenticity of this?"

"Both weapons had the same serial number. Both bore the same scars from use. Both weapons produced the same landmarks upon test bullets. Yet at that time only one weapon had been fired; the one tossed in the corner."

"Your Honor, I enter as Exhibit A these weapons, duplicates of one

another. They are definite proof that duplication of objects did take place."

"Evidence accepted."

"It will be noted that the serial number on these guns is registered in the name of Harry Foster. I will suggest no indictment at this time for the criminal act of having two weapons with the same serial number but I do suggest that it be remembered."

He turned to Miller and said, "That is all."

Cranshaw arose to cross question. "Mr. Miller," he asked, "is there any way of telling which of those guns is the original and which is the duplicate. I assume that they are not *both* duplicates."

"Only the marking on the weapon that was fired after the killing."

"But, Lieutenant Miller, this is not conclusive. Which weapon was used to kill the dead man—the original or the duplicate?"

"I object. That is irrelevant, immaterial, and incompetent!"

Cranshaw smiled deeply. "It is all three, Counsel. I want to know at this time who was the killer and who was the duplicate?"

Miller shook his head. "Only he can answer that."

"That is all," smiled Cranshaw.

Jones called the defendant to the stand. "Mr. Foster, did you or did you not make a duplicate of yourself?"

"Objection. The question is an obvious attempt to incriminate the witness!"

"Sustained!"

"I merely wish to establish the identity of the witness."

"Then do it without asking him leading questions."

Jones faced Cranshaw angrily. "How can I?" he stormed angrily. "His name, his measurements, his fingerprints, his . . . everything is identical to that of the slain."

"Inconveniently coincidental," smiled Cranshaw.

"Mr. Foster," said Jones quietly, "upon the night of May 18th, was there a duplicate human being made?"

Foster nodded in a superior fashion.

"And are you the duplicate or the—"

"Objection!"

"Sustained!"

"That is all, Mr. Foster," replied Jones angrily. He turned to the jury and smiled. "My points are simple but clear," he said. "Circumstantial evidence it may be, but a more profound interlock of such evidence is seldom found. One: There was a duplicate made. Two, a man was killed by a weapon belonging to Harry Foster, in Harry Foster's apartment, and all evidence fails to show the occupany of any other human being. Three, the defendant admits that there was duplication made but makes attempt to confuse the Court by denying to answer whether he is original or duplicate! This is an admission that he was the duplicate made—or that he was the original. No denial is made of this. Since it is impossible by any ordinary means to distinguish one Harry Foster—defendant from the other Harry Foster—victim—a sentence of death is indicated for Harry Foster, the defendant, since the killing conveniently made the only distinction."

Cranshaw arose with a stretch and a smile. "First," he said sincerely, "I want to clear my client of other charges against him. Your Honor, and Counsel for the Prosecution, will you admit as evidence the statements made by relatives, and other competent authorities to the effect that the dead man was the Harry Foster who was wanted for crimes of various nature?"

"I object!" exploded Jones. "If any duplication was made, then the duplicate is equally guilty!"

"All right," said Cranshaw. "Let it pass." He faced the jury with a persecuted air. "Anything to make life difficult," he laughed.

"Now," he said, "may I enter as evidence the suit that the slain man was wearing? It is—or was—identical to that which my client is wearing now. At the present time," he said with a smile, "the client's suit is a little more worn, though in better condition due to the holes in this one. Now, for my first witness I call Dr. Lewis."

"Dr. Lewis, have you ever considered the being of a duplicate?"

"Not until recently," smiled the doctor.

"You are a competent psychiatrist. Can you tell us the respon-

sibility-quotient of a man kept in a state of suspended animation until he was thirty-three years old?"

"He would have little or no sense of responsibility at all."

"Would you say then that a duplicate of any human being was responsible for the acts of the original?"

"I would hate to ponder the question," replied the psychiatrist. "It would depend entirely upon the degree of duplication. Yet it seems to run against the grain to make a duplicate responsible for the acts of the original when up to this time the duplicate had no true identity."

"You assume the duplicate would have an identity?"

"If the duplicate is capable of original thought, he has."

"Yet, Dr. Lewis, what comprises identity?"

"The ego is a rather deep subject," replied the doctor thoughtfully. "The question 'What is this that am I?' is one pondered for many thousands of years. It is still without answer though it is generally accepted that a man is what he is because of his lifetime of experiences."

"Will you expand upon that, doctor?"

The doctor nodded. "A newborn babe has little true identity or individuality. That is because his only experience is almost congruent with all other new born babes. As he lives, his experiences will differ because of environment and heredity from others in the case of twins this is true despite the idea

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Works wonders for a beard that's tough!
And Thin Gillette lasts long as well—
Saves money, time; your face looks swell!
Rigid inspection assures absolute uniformity
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Produced By The Maker Of The Famous Gillette Blue Blade

that the environment and heredity is identical. It is not. The environment of Twin A includes the life of Twin B, and vice versa. Therefore each twin must evolve a different identity. As a man grows and enjoys experience, each factor changes his personality in some way major or minor, and he emerges a true identity, which, however, is different in some minor way from day to day as his experiences accumulate."

"Then at the instant of duplication, the two persons have approximately the same identity?"

"Yes save for the single fact that one has just been in the process of formation whilst the other was in the process of being recorded. I assume that the two processes are not identical."

"Then," said Cranshaw, facing the jury, "may I point out that no identity was really removed from the face of this earth by this so-called killing. But one birth certificate was issued for Harry Foster. But one Harry Foster lived and grew and became the Harry Foster that many people knew as a motion picture star. A duplicate Harry Foster was made, and then eliminated. Harry Foster was killed—and yet Harry Foster remains! If the law states a life for a life, we have it in the person of the living Harry Foster! He—killed himself."

Cranshaw smiled indulgently. "There are laws concerning suicide," he said. "These laws make suicide a felony. Because of this there have been many jokes made about the penalty for suicide, but there is good reason for such laws. You see, Gentlemen of the Jury, it is not necessary to wait until the burglar emerges from the bank with his coat pockets bulging to arrest him. You may apprehend him while he is drilling his way into the bank for the crime of Attempting To Compound A Felony. An attempt at suicide is, then, an attempt to compound a felony and the would-be suicide may be apprehended for his own protection. Since the penalties for attempted suicide usually consist of compelling the miscreant to undergo psychiatric treatment to remove the obvious mental unrest that gave him the will to self-destruction, I suggest that my client be given the same treatment for the crime of suicide."

He sat down. "Now," he said with a smile, "that should hang that jury higher than a kite. What is the penalty for successful suicide? Not execution."

"Shut up," snapped Foster.

The jury returned after many hours, and the foreman arose. "Your Honor, we have deliberated this case and find that our decision requires explanation. Suicide we reason, is self-murder. Since suicide requires a certain amount of planning and contemplation, we find the defendant guilty on all charges including Murder in the First Degree!"

The roar of the spectators covered up the judge's words, but Harry Foster heard him pronounce the fatal words.

Tim Woodart turned the key in Jenny Foster's apartment, shoved the door open and stood aside to let her enter. Once in the dim living room, she turned and buried her head in Tim's shoulder.

He held her close and stroked her head with one hand. Over her head he saw the clock on the wall, it registered midnight. "Easy," he said softly. "It's all—over."

She nodded, too filled with emotion and relief to speak.

Then as the sweep-hand crept past the instant of midnight, a sardonic voice came from the easy-chair.

"A very pretty scene."

Jenny whirled, her face white. "Harry!" she said with a quavering voice.

As Tim faced Foster he asked Jenny to call Lieutenant Miller.

Foster laughed again. "Call him," he jeered. And remember that the Law of the Land makes it impossible for me to be placed in double jeopardy!"

"What's been done before can be done again," said Tim.

"Uh-huh," laughed Foster. "But not punishment. The Law, yer know.

"You see," jeered Foster, "knowing that I am going on and on and on, I merely had Cranshaw make another duplicate of me. Now no one can touch me!"

Jenny turned from the telephone and Tim put an arm about her and led her from the apartment. He left the door open—

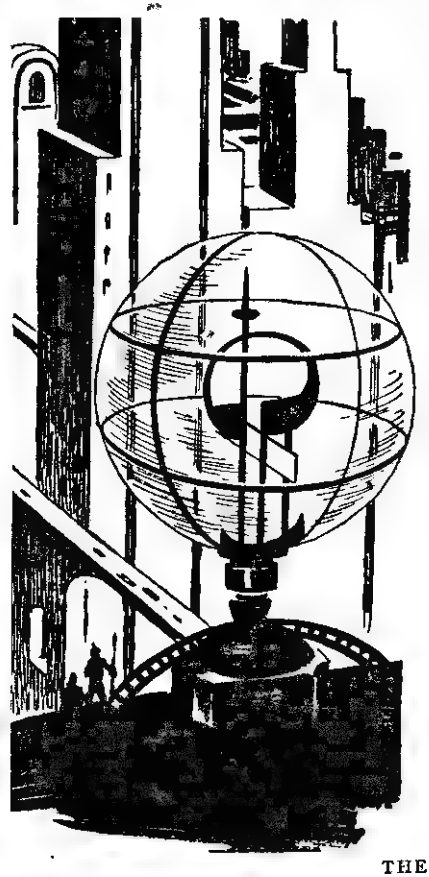
"There he is," said Tim, outside. "And you know what he has in mind."

Harry Foster nodded, took out his revolver, and charged in. The quiet apartment was filled with the sudden racket of gunfire, quickly there; quickly stopped.

"Let Miller clean up," said Tim harshly.

"But—?"

"They're equally fast and they're equally forewarned. Tough guy—it took four of him to get rid of him."



THE END.

TARGET

BY PETER CARTUR

***Sometimes,** quite accidentally, a peaceful newsman or trader can come mighty near to starting a major war. A minor misunderstanding of something a native says or does. . . . It's happened here on Earth more than once—*

Illustrated by Orban

Blade lifted his hat several inches above his head, felt a brief respite from the heat, as though some gust of wind had blown. He let the hat down slowly, so that it barely rested on the top of his head, then made fanning motions with his hand in front of an impudent young face.

He stood for an instant, squinting in the glare, then walked along the wooden platform raised above the white desert sand. By nature and training he had come into a brashness that even those who disliked him found disconcerting and hard to cope with. Yet it was with con-

siderable respect that he approached the white-haired man who stood at the end of the platform. He waited, unspeaking, until the older man noticed him.

"I'm Blade, of Modern Press. *They told me who you are, sir."*

The older man smiled easily. "Just another legman like yourself, Blade. Trying to earn his daily bread."

"Yes. But you're . . . you were the 'reporter who made himself king'."

The old reporter's easy smile faded. "I was," he admitted. "But that was a long time ago, and didn't amount to much. It was just a small island, and I was trying to bring a little civilization to the natives."

"You almost started a war."

The old reporter looked cross, uncomfortable. "That wasn't my fault. There was a cable station there. When we had the misunderstanding with the German warship I put it on the cable. The operator at the other end owned stock in the cable company. He was the one who built up the story and sent it on to the papers."

Blade bobbed his head sympathetically. "I remember. The last I heard you were in a rowboat heading for the open sea. Maybe a hundred warships from a dozen different countries were all heading for the island. They were all ready to blaze away, not even knowing who the enemy was."

The old reporter looked sad and tired, as old as he was. "That was a long time ago, Blade. Let's forget it. I'm a lot more interested in whether or not this army rocket is going to hit the Moon."

"You haven't any right to keep us here," Kerin insisted. "We ought to be carrying out our trading assignment instead of sitting here on this forsaken moon."

Trem looked up from the navigator's table. He shook his head just a little, clearing it of certain dreams of wealth that had come to him. His large violet eyes glanced briefly at Kerin's strained face, then went to the vision screen through which Kerin had been staring. His pupils contracted swiftly against the glare. He shook his head again, turned back to Kerin.

"If you wouldn't spend so much time looking at that 'forsaken moon' you wouldn't mind it so much. That's enough to give anyone nerves."

Ault, forward in the flight station, twisted around so that he, too, was looking at Kerin. His flattish, good-humored face changed just enough to show some of the contempt he felt.

"Nerves is what Trem can call it, Kerin. Anyhow, you're a fine one to be complaining. It's not Trem's fault we're this far off course. If you hadn't bungled, we'd be where we could carry out that assignment you're so anxious about now."

Kerin cleared his throat for reply, then saw something in Ault's face and thought better of it. He dropped his eyes and turned back to the vision screen showing the brilliantly

lighted, fantastically carved surface of Earth's moon.

Ault turned further in the flight station seat, so he could see Trem clearly.

"How is it?"

"Good. I've got the primary co-ordinates established. I think I know about where we are. Night will hit us in a few hours, then we can rough check against star sights."

Ault grunted. "That won't give us closer figures."

"No. But it will confirm the ones I've got. I think I know within a few parsecs."

Ault nodded. "That's close enough, all right. This section of the galaxy is so empty that a parsec's as good as in the grid."

Trem shrugged. "We can't be too sure, of course. I've got the three space co-ordinates established. And I've got the provisional time set-up. You know how it is, I've got to keep jockeying time and space co-ordinates back and forth until everything lines up.

"Now I've got to project everything back along the basic time lines. If the star sights agree, then we'll know where we are."

"Suppose they don't agree?"

"I start over. It would give me two possible space positions. I'd have to get the sure time intersection to determine our true position. It's always time and the speed of light that throws the works. If we didn't travel so much faster than light, there wouldn't be that time co-ordination problem."

Ault grinned widely. "If you say so, Trem. I'm just a driver who got knocked out of Navigation. I just couldn't soak it in." He turned so he could see Kerin, still looking at the vision screen. "Some men that get through don't seem so bright, though."

Trem grinned with him, followed the gaze. "Some's got relatives."

Kerin turned quickly, angrily, looking first at Navigator Captain Trem, then Pilot Ault, then looking between the two of them.

"That wasn't called for." His thin, bitter face worked back into a pleading expression. "I've got relatives, yes. But getting through Navigation was on my own. Just because I made a slight miscalculation –"

Ault let out a whoop of pure joy. It was a moment before he spoke, and then the words came slowly, not emphasized at all. "If the miscalculation had been a slight less slight, we'd have been a beautiful 180° off course."

Trem smiled, shook his head at Ault in disagreement. "Kerin's right, Ault. He's a competent enough junior navigator, just inexperienced. It was a *slight* miscalculation. A serious error would have thrown us out of normal space time entirely. It's happened."

Kerin's face showed gratitude for the unexpected support. He left his place at the vision screen and came forward to be close to Trem. Ault left the flight station and joined the two at the navigation table.

"Finished checking the planet, Ault?"

"Might as well, Trem. Every-

hing just confirms our early looks. Dominant life form is human, about he same as our own race. They've got nations, airplanes, wars, money, diseases, taxes, electronics –"

Trem broke in. "In other words, hey're in the final stage of Class XII civilization before planetary escape."

"That's it."

Kerin looked from Ault to Trem. 'I don't get it," he admitted. "What s this Class XII?"

Trem looked up, surprised. 'What did *you* learn in Indoctrination?"

Kerin flushed, then grinned sheepishly. "You said I had relatives. I skipped Indoctrination."

"Lucky." Ault looked at Kerin with new respect.

"No, it's worthwhile, Ault." Trem turned back to Kerin. "A Class XII World is like the planet whose moon we're resting on. Or like our own planet of Omin.

"It has an intelligent human life, dominant. The climate is warm, there's at least one moon and a clear atmosphere. Its physical and chemical make-up, of course, will support human life."

Kerin shook his head again. "All right. But does that mean you can lump them together into a class and expect certain things of them?"

"Naturally. The very general course of progress will be almost parallel. Which makes this planet almost on the verge of discovering methods of space travel. Rockets first, of course."

"But—suppose there wasn't a moon? Or they didn't have a clear atmosphere."

"Then they wouldn't be Class XII and we could expect different things of them. If they didn't have a clear atmosphere, they might run the course of their race life without ever knowing of the stars, and thinking themselves alone in the universe.

"Without a moon, but with clear atmosphere, space travel might be delayed for the invention of a better drive than the rocket. Which would mean that their civilization would be at a higher level at the time of planetary escape. In the latter case there would probably be only one government, and a higher level of knowledge and culture. Rockets are almost invariably the by-product of war."

"They're barbarians, then," Kerin said. "Another good reason for us to be leaving. There's no telling *."

Trem laughed. "Ault, our friend Kerin apparently doesn't want his share of wealth. Also, he seems to want to be skinned alive by the directors of Omin Trading Combine."

Kerin showed alarm. "What do you mean?"

"Where are your wits, man? Here's a new, unknown planet with about two billion people. Also, a number of possibly valuable planets to which they will have sole rights. Don't you think that would be of interest to the Trading Combine?"

Kerin jerked his head. "Some day, certainly. But we're not allowed to have any contact with them until they've developed space travel. I know the law."

"Sure, and we'll observe the law. But that navigating error of yours, Kerin, has given us the opportunity to put the Combine in on the first level. These people are ready for Escape."

"But they don't have it!"

"They will. And very soon. Possibly before we could make the trip back to Omin."

"And that, my friends," Ault observed, "is the bind."

"Yes. If we can get the message to Omin Trading so it will be an exclusive, we'll be able to retire." Trem's face brightened with the thought. "For establishing an exclusive we'll be eligible for ten per cent royalties, for life. We could each buy a share in the Combine."

Kerin's narrow face seemed to flatten as his eyelids drew down. There would be riches, no more need to risk the dangers of space. Riches enough to—

"Simple, then. We'll use the code. That's unbreakable."

"And how do we get the message back to Omin."

Kerin flushed at the underlying contempt in Ault's question.

"Well . . . by Telever—Can't we?"

"Yes, but that's not what Ault meant. We can't reach Omin directly. We have to go through Federation Relay. That means no code can be used. According to charter 'all circuits must be supplied. Not only to Omin, but to all subscribers. That's all of the forty-two hundred systems of the Federation,' and some seven thousand unfederated systems."

"In other words," Ault translated for Kerin, "there'll be thousands of trading ships around waiting for the flower to open. We won't be able to get an exclusive, and, as touchy as things are in the galaxy just now—"

Trem nodded. "If we just sit around without sending out a message of some sort, Omin will list us as unreported. They might even accuse Jarnin. There's a lot of bad blood between them now. The Federation would get us by tracers, but that would be another end to a possible exclusive."

"Suppose we . . . uh . . . raided the planet in—"

"No, Kerin. Federation agents always get around to checking the evolution of invention leading to space travel in any opened system. We'd be caught sure. And more trouble between systems."

Ault turned from the vision screen where he'd been watching the Lunar horizon for the first trace of nightfall.

"Trem, we send a message to Omin. Every government will get the message, but, if it seemed routine enough, they wouldn't pay much attention, would they?"

"Guess not, Why?"

"Suppose we give Omin our position. Tell them we are staying with the Inner Galactic Colony *here*—without saying *where*, understand? Just *here*—and that we need more trading supplies and a representative.

"Other governments wouldn't check. They'd assume it to be a

system they knew about and wouldn't bother with the co-ordinates. Especially since we mention an Inner Galactic Colony.

"Omin will know something is off when we ask for a representative. They'll check the co-ordinates against the Opens Systems Catalogue and guess what's up."

Trem smiled. "Ault, that ought to work."

Trem came down the ladder from Observation and nodded to Ault. A full eyelid dropped momentarily over a violet eye in a satisfied wink. "Star sights check, Ault. We know where we are."

Ault turned to Kerin and grinned unpleasantly. "We know where we are, Kerin." Then he followed Trem to the communications panel and watched while the master switch was flicked on, listened to the slowly rising hum of power. There was a short *beep* from the speaker when Trem pushed the netting stud. Trem turned in annoyance.

"Kerin! Lower that screen!"

"I was waiting— The meteors—"

"We're safe enough. Lower the screen so I can get through."

"Right. Screen down."

Trem pushed the netting stud again, turned the crank slowly, then twisted the quench adjustment until the low whistle disappeared. He flicked the netting stud several times and was satisfied with the silence. Then he touched the pressel.

"Carrier requested," he said into the microphone. "Communication to Omin."

The reply was immediate. "Traffic accepted. Communication to Omin. Sender waives security."

"Sender waives security," Trem repeated. "Message follows:

"Omin Trading Combine from Trem, Primary Trader EG-5572-OTC. As directed I am disposing of cargo, laying over in Inner Galactic Colony of planet. Forward additional goods and representative immediately. Co-ordinates follow: 1157.2278, 6—"

Trem gave the rest of the co-ordinates, signed off and waited for confirmation.

"Traffic complete and relayed," came the voice from the panel. "Omin Trad —"

The voice ended abruptly, as though choked off. Trem turned angrily.

"I thought I'd better get the screen back up," Kerin said defensively. "You were through, weren't you?"

Trem didn't answer.

The night was ten hours old at their place on the Moon. A sleeping period found them sleeping little, thinking and half-dreaming of being ex-traders with millions and billions to their accounts. Each had his own golden thought that needed only time and luck to bring into reality.

Trem and Ault rose together and went to Observation. They stood in the bubble, watching the sky, the Earth, and the black surface of the Moon through the transparent dome.

"There!"

It was coming too fast. Ault had just started to turn, hearing Trem's cry, when the object struck, less

than two miles from their position.

They were both thinking *meteor* when the explosion came. Only a fraction of the full brilliance of the flash got by the dome before the walls automatically darkened against the glare. Yet their eyes were blinded for the moment. They felt the ship shake beneath them, and even through the screen some of the power of the concussion could be felt.

Ault spoke first. "A bomb, Trem."

Trem's eyelids were still down, his mind still filled with the picture of the flash. "No . . . no, it wasn't a bomb. They're escaping their planet, Ault."

"*That* way?"

"First shot, probably. Unmanned rocket with explosive head. They'll be watching through telescopes to see it hit. I imagine they saw *that* flash. It was atomic. We're just in time."

Their eyes were clearing and the two looked up at the planet riding high above them. They'd seen it more closely through the scanners, but there was a mystery and a beauty to the planet at this distance. And ever the thought that, like thousands of races before them, another was looking to the stars, yearning and reaching.

Ault rubbed his eyes again, wonderingly. "That flash must have improved my eyesight. Everything looks clearer than it should."

"Yes. I was . . . Ault, the screen must be down!"

They found Kerin talking into the communication panel. Ault headed for him. Trem reached the screen control, heard the beep from the speaker as the screen went up.

Ault hadn't been gentle with Kerin. The junior navigator was against the records panel, holding himself half upright by the aid of the rail. Tears were running down his cheeks, slowly, and he was sobbing, to himself and brokenly, as though without the full strength left even to cry. Ault was rubbing his knuckles and looking satisfied.

Trem took Kerin by the shoulders and shook him roughly.

"Listen to me, Kerin. Listen—what did you tell them?"

Kerin tried to pull away, then straightened up and faced Trem, without looking at him.

"Just that we were being attacked."

"Just -Just! Did you identify us? Kerin, did you have time to identify us?"

"Yes."

Trem took away his hands, let Kerin slide unnoticed to the deck.

"We can call back," Ault suggested. "Tell them that it was—"

"A mistake?"

"Well, we could say Kerin was out of his head."

"Too late. The message is all over the galaxy. Our position will already have been checked from the previous message on file. There's no chance of stopping an investigation."

"No, I guess not. I had it all planned out. I was going to take a few million and buy— Well, it doesn't matter now."

"No. Open the screen and we'll

find out if there's been any reaction yet."

Trem went to the communication panel, switched on the power, then stood back, not touching the pressel.

"Request Trem of Omin, Primary Trader EG"—the calm voice of the operator at Federation Relay droned out of the speaker—"acknowledge. Further traffic follows:

"Message: How many Jarnins estimated in colony under attack? War Director, Empire of Jarnin—Message: Sixty Systems Citizens have courage. Twenty thousand first line battle cruisers on way. Sixty Systems Directorate—Message: Federation Fleets dispatched. Vanguards under ultimate drive to evacuate Federation colonists. Federation Council—Message: Trem of Omin. Full resources of allied systems already mobilized. You will be protected or avenged. Omin Trading Combine—Message: Toren Nationals, stand and fight. Remember—"

Trem, hand still on the switch that had cut off Federation Relay, turned to Ault:

"Man your flight station, Ault."

Beyond the orbit of Pluto Trem and Ault sat together in the flight station, eyes on the view screen.

"Look at them, Ault. A million, at least. A million maddened insects."

Ault stared at the screen, at the countless points of light that indicated moving ships.

"Insects?"

"The warships. I'm thinking of the way they're coming in swarms, fighting mad. Faster than light, millions of weapons ready against whatever needs attacking. It's a shame to leave a scene like this."

Ault cleared his throat. "I think I know what you mean, Trem. Still, I think—"

Trem nodded. "I do, too. We better get out of here. Galactic drive, Ault."

The old reporter watched young Blade leave the observatory building. The kid was hurrying out into the night to file his story as spot news.

For the old reporter it was different. He had to have a few minutes to work this into a feature story.

He ran fingers through whitened hair, leaned forward in thought. His mind wasn't working smoothly. Every time he thought of the flash of the rocket exploding on the Moon – Well, it made him feel as he had only once before in his life.

It was when he was on the native island, just before the warships arrived. Even before the smoke from their stacks had been visible— It was an urge to get away, far and fast.

Once, by accident, he'd almost touched off a major war. Fortunately, he'd failed, but now the conviction came to the old reporter that someone had succeeded. He shook his head to clear away the wild thought and walked toward the door. Looking out at the peaceful Milky Way should ease his mind.

THE END.

COLLECTOR'S ITEM

BY FRANK B. LONG

If you don't have time-travel, can't see the future, perhaps even the sound of the future can be devastating—

Illustrated by Timmins

Neville was finished. "Finished" being a somewhat ambiguous expression, indicating either irrevocable doom, or the joyous completion of a task with its accompanying brightly sparkling success a few qualifying statements are in order. Neville didn't realize it, but in his case it meant both.

The thing that Neville had invented was a success in that it fulfilled all of his expectations. It hummed when he clicked it on, and that humming was as beautiful a

thing to hear as frequency modulation or a rainbow-hued waterfall in Victoria Nyanza.

It hummed and it would sing! He was tired now, very tired. But he'd accomplished the impossible without removing his glasses from his nose.

He'd bridged the final gap between theory and practice in the most bewildering of all fields—that of time travel! If anyone had suggested to him that the field had been overworked--in fiction at least—his reply would have been simple, and devastating. "Speculation and reality keep different hours—and when one comes in the front door the other leaves by the back!"

The phonograph was a console model, fitted out with such a wealth of mechanical detail that Neville was at a loss to understand how he could have invented it. But of one thing he was certain. The phonograph would be capable of high-fidelity reproduction a hundred years in the future or—a thousand years.

As a rule sane men did not invent time-traveling phonographs. But there were exceptions to every rule and Neville was confident he had a firm grip on his sanity. Funny—to have occasional memory lapses, to invent amazing things in the darkness that could stand the test of calm appraisal in the sunlight.

High-fidelity reproduction! The phrase pleased Neville, and he rolled it on his tongue as though it were Napoleon brandy from a cobwebbery old bottle in his well-stocked cellar.

The phonograph was not only a miracle of mechanical perfection. Neville was confident it couldn't be destroyed by anything short of the Hiroshima technique. The alloy he'd used to build a tight little fence around the "home-recording" turntable was burglar-proof. The turntable was walled in, roofed over and as impregnable as a fused tungsten bedlamp.

If some Stokowski of the future decided to capture the dramatic vitality of Stravinski in front of the phonograph, the recording would be imperishably preserved in vinylite. But—just let him try getting the record out!

Hah! More likely the attempt would be made by some garrulous big-brained dwarf or mischievous child! Like most men of inventive genius, Neville was a slave to the stereotyped patterns of thought which peopled the future with malign baroques.

Just why the future should have taken on an aspect of lunacy for the more imaginative examples of Homo sapiens was anybody's guess. Perhaps a race determined to blow itself off the face of the earth preferred to believe it would turn into something completely mischievous and grotesque before that dire event took place. Homo sapiens wouldn't feel so badly about destroying itself if it ceased to be itself.

It was just a guess, of course, and Neville had never cared much for guessing games. Once in a while he did indulge in abstract

speculation. But most of the time he was too busy inventing things.

The phonograph had not been designed to remain in the future. It would simply travel forward in time, pick up whatever sounds swam within its ken and return with a high-fidelity recording. A collector's piece!

The human race owes much to its poineers. Just how bad a headache it would get from *any* sort of time travel had never entered Neville's thoughts. "I'm going places!" said the slipper animalcule, devouring its brother.

Neville was confident that the high-frequency antenna, which projected from both sides of the cabinet like the horns of a sea-green dilemma, would do the trick. When he clicked the phonograph on the vibrations would warp the temporal-spatial orientation of the entire machine, just enough to send it forward in time.

Neville had gone over every square inch of the machine in search of mechanical defects. There were none. A tall glass and a bottle of Scotch stood at his elbow. His nerves had never been steadier.

True, his lips were shaking a little. But he was sure that his hands wouldn't shake when he stepped forward and clicked on the machine. His lips trembled whenever he found himself wishing for an audience. Words rushed to his lips and tumbled out unbidden. But it was nothing—it was of no importance. He had simply acquired the habit of talking to himself.

Suddenly a tightness came into his face. He remained completely motionless, yet seemed to strain toward the machine as though his entire weight were pressing against the outer loop of a coiled spring.

He spoke with explosive vehemence. "Here goes!"

The click was barely audible.

For a moment nothing happened. Neville was not dismayed. He knew that the slipover would occur in about thirty seconds, without vibratory dramatics. The antenna did not even appear to vibrate, but Neville knew that it *was* vibrating —Not just the antenna, but the revolving turntable, the record, every part of the machine.

Neville was a short, dark-browed man, built like a wrestler. He seemed to be inwardly wrestling with something stronger than himself as he stood waiting, his gaze riveted on the machine.

The seconds seemed to drag, to split up into fragments as he stared, so that he had the illusion of being immersed in tiny, scintillating particles of time that kept swirling and dissolving about him.

Suddenly Neville blinked. For the barest instant his eyes had a glint of wonder. Then the wonder changed to fear, to dread. Outside the laboratory window a factory whistle shrilled, and he shuddered, as though the thin sliver of sound had been inserted unnaturally in his brain.

The phonograph was gone!

Neville swung about, poured himself a stiff one with fingers that shook a little. Three jiggers,

straight. The whiskey glided over his tongue, scorched his tonsils and set up a raw burning in his throat.

He set the glass down and walked to the window. His features had begun to twitch again. It was curious how seldom he was able to control the convulsive trembling of his face.

It came on in spasms and got progressively worse. Eight or ten times a day now. No, no—he was wrong about that. Not only now—for as long as he could remember. Glazed eyes peering in, refusing to believe him. Eyes filled with scorn and sharp curiosity waiting for the trembling to commence.

They'd told him there was nothing wrong with his face! Hah! Nothing wrong with his *face!* Why when he looked in the mirror every twitching muscle was like . . . like Aristotle's outmoded conception of ocular beams! Newton had disposed of that, hadn't he? In the Principia? And what about De Sitter, Einstein?

Some day he'd show them—show them all, even his wife! They'd made a mistake in letting him come home. He wasn't cured yet, not by a long sight. He'd never be cured of the—twitching. True, in his own home, his own laboratory, admittedly well-equipped, he could do pretty much as he pleased.

He was free to invent things! But what good did that do when everything he invented disappeared? No, no, *no*—nothing had disappeared except the phonograph, not even the twitching!

Something about a psychotic split! They were always whispering about him behind his back. As though he were a mischievous child who couldn't be trusted with . . . with —Occupational therapy! The fools! The blind, unreasoning fools—

The man who stood before the spotcast transmitter in the waning autumn of the year 2548 was entirely human in aspect. His name was Henry Mayhew, and his thoughts were as traditional as his name.

His thoughts were traditionally unpleasant—for the world's most powerful representative of law and order suffered from a somewhat childish sense of guilt.

The picture of complete security for himself and his descendants which he held in front of his mind kept blurring around the edges. Blurring—and draining away. He was powerless to control the blurring and he felt guilty about it—and more troubled than he would have cared to admit.

Mayhew was a little below medium height—a lean, hawk-visaged man with a sharply-defined rapacity in his stare. He stood gripping the curving neck of the transmission disk, staring at it as if its shape might at any moment undergo a change which would turn it into an incandescent sheet of flame.

Suddenly he spoke. "Well, Winter—we may as well get it over with!"

The man who had accompanied Mayhew into the spotcasting room had a thin, weary face, with unpleasantly immobile eyes. There

was a bald spot at the back of his head, and the veins on his forehead were thick, blue cords.

He did not look at Mayhew as he replied: "I hope you realize what you're risking by spotcasting on a public beam!"

Mayhew swung about, his lips twisting in a sneer. "I don't like the risks any better than you do!" he said, quickly. "But I've thought this thing through, and I'm determined to go ahead with it. A man in my position has to take risks—or go under. I'm walking right out of the house—leaving the lights on and the door unlocked. But if our enemies are wise—they'll leave their weapons on the doorstep."

"When they come knocking, you mean?"

"They won't come knocking, Winter. They'll come crawling!"

"I hope you're right," Winter said.

Mayhew flushed angrily. The bitter bile of Winter's skepticism was too acrid for his liking. He moistened his lips before replying, as though the taste of it had transferred itself to his tongue.

"I *want* our enemies to know!" he rasped. "Does that satisfy you? What makes you think I won't be believed? Preston has studied my psychograph, hasn't he? He . . . he knows I'm incapable of falsehood!"

"It's the end of an epoch, then?" Winter said, and shrugged, as though something horribly disillusioned and embittered deep in his mind had compelled him to ask the question solely to give a final twist to the screw.

"It is!" Mayhew said. "And we may as well face it! In 1953 Medlar saved civilization by postponing the showdown for exactly five hundred ninety-five years! I hate grandiloquent clichés, but saving civilization was *exactly* what Medlar did. Sometimes I think his name was no accident. You grow up hearing a name like that dinned into your ears—and you try to live up to it!"

"Medlar's meddling was the best thing that could have happened at the time," Winter pointed out. "I still think it's the best thing. If there's anything better—I should like to know of it."

"You'll know if we have to release Bombardment Unit Formula M C 73!" Mayhew said. "But I'm a little afraid to risk it. If we blast the Medlar screens, there'll be a lot of new radioactive isotopes floating over the earth. And one of those isotopes may be us!"

"But the tests—"

Mayhew grimaced. "Yes, we made several tests, didn't we? We disrupted three screens with enough M C 73 to blow a little round hole in the earth from pole to pole. We didn't let the blast get out of control and instead of an earthquake we were treated to a beautiful display of celestial fireworks."

Mayhew made a clicking sound in his throat. "We sent a jet of billion-degree heat as far as the Moon. But there were no enemy cities under the screens to get mixed up with those radiations. We're not

sure what would happen if a lot of very heavy nuclei prevented the siphoning off of the blast. We can't set up controls in an enemy city!"

Winter nodded. "But doesn't that confirm what I said? We should be grateful to Medlar for his meddling. He threw an impenetrable barrier around the wasps without removing their stingers. The old atomic stingers couldn't be drawn, but Medlar neutralized their destructive potential!"

"A neutralized potential is a constant threat!" Mayhew retorted. "Surely you must realize that! Six centuries ago humanity had to endure that threat as the lesser of two evils.

"Medlar did something his contemporaries thought impossible—constructed a force screen of stable atomic nuclei. But he lived in an age of savage internecine warfare. In such an age there could be no security unless defensive techniques outstripped offensive ones. There was no peace in that world—or any possibility of peace.

"They tried out a system of inspection which never could have worked," he added, as though it were hardly worth mentioning. "If you wore thick-lensed glasses, how far could you see under a bed? Or in Antarctica?

"And now?"

"Just the opposite's true! Wild-eyed idealists to the contrary—most of us *are* wasplike, Winter. I'm glad you're enough of a realist to realize that. Peace can be made to last. But only on the 'strike first or be annihilated' principle."

Mayhew looked directly at Winter. "I'd have no hesitation in bombing a screen-protected city if I thought we could get away with it," he said, with startling candor. But we can't be *completely* sure. Quanta are funny that way! We have reason to believe that even the planets jump—right out of their orbits every half million years. It's the only sensible explanation for the phenomenon of cyclic glaciation. And if we gave the earth a prod—"

"But why should we warn our enemies that we can disrupt their screens, and bomb their cities to rubble?" Winter persisted. "Do you call that striking first?"

"Vaporize," Mayhew corrected coldly.

"All right—vaporize! I don't doubt that M C 73 could disrupt every Medlar screen on earth. But those screens have protected *our*

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cities too—for sixty decades! Why twist the cat's tail? Why can't we still be grateful to Medlar?"

"Because we'll be too late if we wait!" Mayhew told him. "They're ahead of us now in some ways! If they strike first, we'll be finished!"

"But you'll be inviting them to strike first!"

Mayhew shook his head. "No. We'll simply be giving them a psychological prod. When I tell them what M C 73 can do—we'll have won, Winter. They'll have to believe me. A psychograph recording can't lie. I have a traumatic horror of falsehood. Even Preston knows that. Eradicating that trauma defect would tear me apart. It could be done—in two . . . three years! But they have a psychograph which shows that it hasn't been done."

"Their spies are accomplished," Winter commented.

"Only as accomplished as I want them to be," Mayhew said, smiling thinly. "I let them filch that psychograph from the Central Bureau because I wanted them to believe me. And they will! There'll be one World Federation instead of two, and I'll be at the head of it!"

"Disarming our enemies *could* present technological difficulties," Winter reminded him.

"No—I hardly think so! Their surrender will be too immediate and abject. We'll keep our screens and compel them to dissolve theirs. They'll scurry to cover, fast. Right in out of the rain of death we could hurl at them! Did you ever hear of umbrella ants?"

"Umbrella—"

"In the deep jungle they fashion umbrellas of leaves, to ward off the lightning. But they are not above scurrying into the nests of their neighbors when the downpour becomes torrential. And when they realize what a mistake they've made their fat is in the fire!"

Winter tried to smile, but broke out in a cold sweat instead. "Insects fascinate you, don't they?"

"You started it!" Mayhew reminded him.

"And you'll finish it! One federation, ruled by one man with absolute power of life and death over two billion human beings. Would you like that yourself?"

"It isn't a question of what I'd like or dislike," Mayhew said, chillingly. "Military might alone can preserve the human race from complete extinction. Surely you must realize that divided power has become the exact equivalent of a fine distillation of cobra venom!"

As soon as the spotcast had passed into history Mayhew knew that his life hung in the balance. But he had no regrets. He valued his life highly, but it scarcely weighed in the balance against the two billion lives he'd tossed on the scales.

He moved through the sun-reddened upper rooms of his elaborately fortified house, and thought of grapes ripening on hillsides in far-off lands that had suddenly acquired a destructive potential far in excess of their population.

Would his word be doubted? A

few misguided psychologists had stated publicly that all psychographs were suspect. The tensions created by a supreme decision involving millions of lives might sweep reason aside in enough brains to make his threat boomerang.

Would his enemies risk destruction to save their way of life? For reasons difficult to explain an established way of life could seem more precious than security to men in positions of trust—not only to the men at the top. A vortex of suicidal anger could whirl an entire society to destruction without any guidance from its best minds.

Kenneth Preston was the man he feared most. Atomization at birth might have spared his enemies the ghastly necessity of nursing that viper in their bosom.

It seemed incredible to Mayhew that any man could love power as much as Preston did. He had an awesome way of imposing his will on everyone because he was so completely selfless. He lived in a vacuum from which every human impulse, except the will to power, had been sucked. He was human only in his capacity for making decisions and enforcing them.

He was not a tyrant because he had no personal ambition. He was neither compassionate nor heartless. He was a cold intellectual machine that fed on power, functioned through power, and made decisions which no ordinary man would have dared to make.

Homo superior? Whispers had filtered through which Mayhew refused to believe. He thought of how pleasant it would be to force Preston into a dark corner and take him by the throat, increasing his grip steadily until his enemy ceased to struggle.

The stimulating wish-fulfillment fantasy was rudely interrupted by steps crossing the room at Mayhew's back. He whirled, flushing guiltily, his entire attitude that of a man who had been lulled into momentary forgetfulness of his duty by thoughts which were unworthy of him.

The intruder was Norman Winter.

As Mayhew stared at his foreign secretary the redness in the room seemed to blend with the shadows that were dancing on the walls on both sides of him.

Winter advanced with surprising swiftness for a man whose steps dragged, his nostrils twitching as though he were trying to expel air through them, or as though he'd found something unpleasant under a damp stone that was running swiftly up his back.

Mayhew stood rigid, more sensing than understanding the jumble of words which poured from Winter's lips.

After a moment understanding seemed to come to him.

He had an impulse to knock Winter down, pick him up by the scruff of his neck and knock him down again. He had an impulse to walk to the wall and beat his head against it until his thoughts ceased to torment him.

When he spoke even Winter did not fully realize how great his anger

was. "So Preston thinks we're bluffing, does he? He's used that cold brain of his to convince himself we're gambling on a weapon that's still in the blueprint stage! Well—*he'll find out!*"

The enemy metropolis was stirring in the sun-reddened dawn. It was a city of pylon shaped buildings, magnificent in architectural sweep, its streets radiating outward from a great central dome like the spokes of a wheel.

It covered sixty-five miles of enemy territory. But to the inhabitants of the city it was not enemy territory. It was—home.

As the city awoke in the still dawn a dull glow formed in the sky above it, and life began to stir in all the buildings of the city. Then along the pulsing arteries of the city conical vehicles moved and men and women began to toil joyously at creative tasks.

There was no drudgery in that city; no bent bodies or warped minds. The harnessed energies which could not be released for destruction had removed the crippling sting from toil, and turned every waking hour into an adventure and a challenge.

The child sat in a nursery decorated with murals depicting animal and human evolution in all its stages a boy of seven, with shining dark hair and an intent, eager face. Directly behind him a herd of woolly mammoths fled before stone age men armed with rude flint weapons. Directly before him intricate machines towered from floor to ceiling in a shining panorama that depicted human civilization at its apex of achievement. By simply turning his head the child could see the human drama unfolding, the long, bright sweep of human accomplishment from ape to man.

The child was beginning to think for himself. His toys helped him. They were truly extraordinary. A little mechanical man, transparent, its every organ anatomically accurate, as though it had just stepped down from a platform in a medical college. It could walk and talk The science of electronics had never scored a greater triumph

There were other toys ingenious beyond belief. A clown that could add, subtract and perform simple sums. A little concert orchestra, led by a grave-faced maestro who had mastered the difficult art of bowing from the hips.

A child's toy could be the most important thing in the world.

An immense weariness almost blotted out the kindliness in Kenneth Preston's face as he stood regarding his son. He had entered the playroom quietly, without disturbing an intent, eager whispering which brought a queer ache to his throat. He felt like sinking into a chair and burying his face in his hands. But he knew he had no right to do that. There was no sense in alarming the lad.

The room blurred a little as he stared. He wanted to take his son eagerly by the hand and talk to him about—death? No. Better not to speak at all. How could he ex-

plain to a child that a trap was about to be sprung that would close on everything forever? How could he explain to a child that slavery was worse than annihilation?

Preston stood very quietly waiting for the lights to go out.

At first the descending rocket was a mere pinpoint of light in the middle of the sky. But it grew swiftly larger, becoming brighter and brighter—becoming so bright at last that it outshone the noonday sun.

The explosion was so tremendous that it seemed to shatter the very keystone of matter itself. It was an expanding whiteness that turned swiftly to blue, green, yellow, purple, red. It was a blast of sound that would have shattered the eardrums of every man and woman in the city—if the city had remained to reverberate to the blast as it traveled outward from its source.

But there was no city—nothing.

The vaporization of the entire city was instantaneous with the birth of the blast. Its buildings melted, ran together and disappeared.

There was no human awareness of the tragedy as the city vanished, for human awareness cannot exist in a time span too brief to be measured by the instruments of human science.

If Mayhew had thought coldly *about it, he would not have cared* for that part of the . . . the symphony. But so tumultuous were the emotions aroused in him by the all-engulfing sweep of the explosion that his enjoyment was not marred.

As a poet had once phrased it:

Destruction hastens and intensifies.
The process that is beauty, manifests
Ranges of form unknown before, and gives
Motion and voice and hue where otherwise
Bleak inexpressiveness had leveled all.

Mayhew turned from the televisual receptor slowly, his eyes shining, and suddenly he was thinking aloud. A completely normal man may think aloud under the stress of strong emotion, but seldom in such a weird way.

For Mayhew was repeating aloud a formula he had memorized so thoroughly that its every equation was seared into his brain and had become an integral part of his triumph.

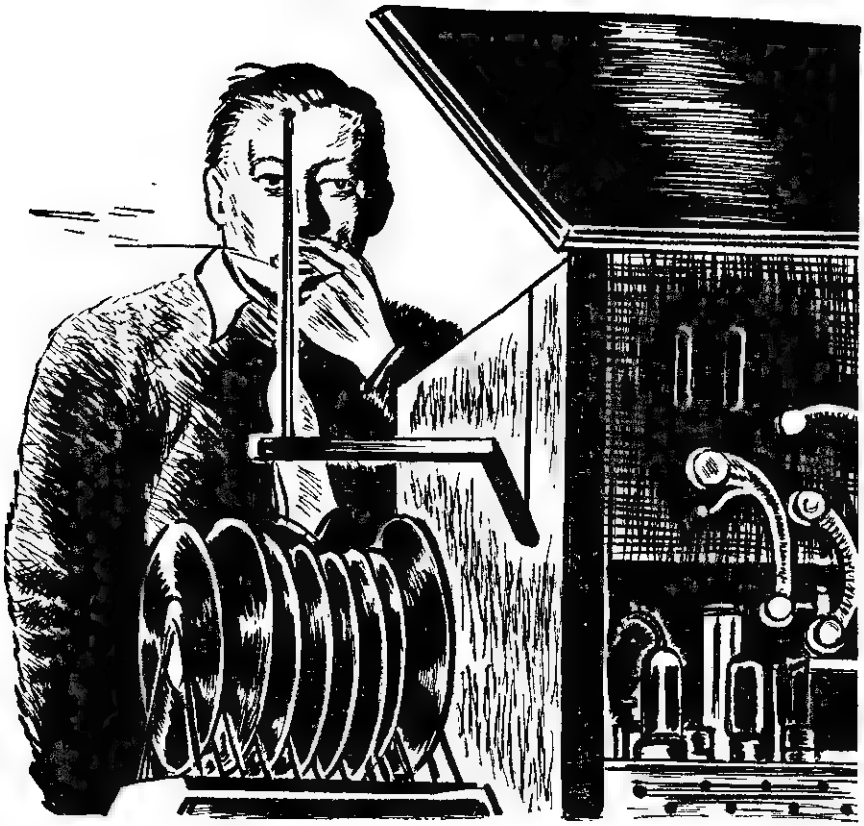
He did not see the phonograph materialize in the shadows behind him. He did not hear its vibratory drone. He stood with his back to the shadows, his thin, haggard face becoming darker and darker as he repeated the formula over and over, like a man in the grip of an instantaneous catalepsy.

His lips were still moving when the phonograph vanished.

Dr. Ralph Medlar envied his former cronies at Oak Ridge as he had not envied his newer cronies at the plant which bore his name.

At Oak Ridge human energies had been building up to a climax *which had swept away an epoch. In the Medlar Laboratories human* energies were at work on a project which might very well sweep that epoch back again.

"Epoch" was a weak term to apply to the whole of human history



right up to a tired old man's brainstorm. But he detested such tortured terms as "pre-atomic civilization" and "crude power age."

What was the use of inventing a force screen that could neutralize Oak Ridge if Oak Ridge had ushered in a shining new age of power?

Medlar's heart had never really been in it.

He'd never remembered being so tired. His muscles ached and even the shining new world of 1952 spun dizzily about him as he approached the secondhand record shop.

Music was just about the only solace he had left. A few more equations popping out of his white-thatched head would blot out the glow for generations—for when the Medlar barrier went up the danger signals would wink out in every city on earth.

And the big-brained, hairless mammal that walked upright would be an ape again—for it was danger that had turned him into a man. It was the threat of destruction that had steeled his muscles, expanded his brain. If the old setup re-

turned, he'd still have atomic power, but how would he use it?

The old nest in the trees had been surrounded with danger signals—the glowing eyes of jungle beasts, fierce growls in the night. And the ape had become a Bikini maker!

The terrible beauty of Bikini—the piercingly dangerous, water-shock-wave magnificence of Bikini! With Bikini as a starting point man would advance in seven-league boots. But if the Medlar barrier went up—

Medlar went through the swinging doors of the record shop like a man in a trance. He hardly noticed the inquiring stare of the proprietor, but plunged on toward the rear of the shop with his thoughts in a turmoil.

He liked the novelty record bins best. Quaint Calypsos from the West Indies, hot jazz straight from the trumpet of the peerless Dizzy Flippet, and studio-rejected bunkhouse jamboree songs that dripped sentiment without being maudlin.

In his eagerness to thumb through the records he failed to notice that the sign above the bin read: *Unclassified, mis.*

Medlar's simple cause-and-effect philosophy did not embrace the wider implications of pragmatism. Had he noticed the sign he would have been mildly irritated—nothing more. He was a zealous man of science but he had never conducted a down-to-earth search for life's richest plums in out-of-the-way nooks and crannies.

He had no idea that such plums have a way of gravitating straight toward bins labeled: *Unclassified, mis.* But ignorance is often a blessing in reverse.

Before Medlar could read the labels on the records stacked evenly in the bin his eye alighted on a record that had been shoved into the bin in haphazard fashion, as though someone with blunted sensibilities had tried to get rid of it at the termination of a three-day binge.

For how could a man in full possession of his faculties remain indifferent to the appeal of such a record—a record with a totally blank label and a sheen that made Medlar blink in furious disbelief.

Not all records were black, of course. Children's records were usually red and the Prince of Wales, Medlar recalled, had renounced a kingdom on a blue platter put out by the British Broadcasting Company. But a rainbow-hued record, a record that gleamed with every color of the spectrum as Medlar stared at it was . . . was —

Medlar seized the record and jerked it from the bin, so quickly that he almost dropped it. But he did not immediately carry it to the automatic record player at the front of the shop. He stood for an instant scowling down at his trembling hands, as though fearful that his eagerness would be noticed by the proprietor to the detriment of his purse. After a moment the trembling ceased.

The subterfuge was of no avail, for the proprietor was almost instantly at his side.

"Can I help you, mister?"

Medlar gulped. "Yes. I . . . I was wondering . . . there's no la-

bel on this record. Is it a home recording, d'you suppose?"

The proprietor seemed taken aback. He took the record from Medlar and examined it intently, his brow furrowed.

Suddenly he said: "Oh, I remember now! That record came from a private collection. Guy named Neville a scientific big shot. His wife sold his library and all of his records. Furniture went, too. It made me sick just to be there. The poor guy cracked up. They tell me he's in an asylum now—if he isn't buried!"

"*Frederick Neville!*" Medlar muttered. "Why, he was just about the most brilliant man in his —"

"Know him, eh? I tell you it gave me a jolt. When his wife phoned and asked me to call for his records I couldn't look her in the face. Big house—terrific place. Why, the guy had everything! But I'll say this for the old girl. She stood up to it like a thoroughbred. Didn't even blink when those bums came in and carted away a library it must have taken him years to build. Didn't leave her a penny, I hear!"

"Yes, yes, I understand!" Medlar interjected, feeling like an interloper at a funeral parlor. "I'd like to play this record—if you don't mind!"

"Sure, why not?" the proprietor said. "Nothing much on it. Some guy talking to himself, mumbling. But go ahead. Neville must have made it right after —"

"I don't care when he made it!" Medlar said, his voice rising. "I just want to hear it!"

"O.K.—slip it on the phono! It's revolving—just slip it on!"

Five minutes later Medlar clicked off the record player and turned to face the proprietor, his lips sucked in.

When under the stress of strong emotion Ralph Medlar had great difficulty in controlling his reflexes. Now his hands jerked, and when he opened his mouth to speak his voice was so shrill that the proprietor took an alarmed step backwards.

"Have you a phone here? I'. . . I'd like to use your phone immediately!"

The proprietor shook his head. "There's one in the cigar store across the street!" he said, nervously. "You don't want this record, eh?"

"Wrap it up!" Medlar almost screamed at him. "I'll be right back for it!"

Before the shopkeeper could close his gaping mouth Medlar was out of the shop, ploughing across the street with his sparse hair blowing in the wind.

External events have a way of molding themselves to the needs of men with explosive impulses. In the cigar store Medlar found an unoccupied phone booth, a quick buzz when he deposited his nickel and then—he was dialing his laboratory with a shaking forefinger.

The conversation which ensued was a little on the irrational side.

"Marston? Stop all work on the screen! Yes—that's what I said! We're junking the entire experiment! Yes, yes—I know! I had that radioisotope snag licked! But

now I've got a new formula that will— Listen, Marston! I want you to jot down a new set of equations!"

Medlar tapped his forehead in the humid phone booth. "I'm not sure just what I've got here, but I do know it makes the screen look silly —a kiddie wagon sort of thing! We're in the kindergarten stage of heavy isotope exploration, but I've a pretty good idea what this formula could do! There are techniques so destructive it's sheer madness to waste time thinking along defensive lines. When no defense is possible you accept the inevitable and make the most of it! The nation that gets that technique first has a head start and—

"What's that? Yes, yes—I don't have to go back for the record! I've got a photographic memory! It's all here in my head! Huh? Yes—I said a record. But never mind that now! Just take down these equations—"

Medlar's breathing became calmer. His face was still strained, but as irradiation unit estimates poured from his lips, mixed with some incredible figures, he spoke with the staccato efficiency of an adding machine.

There ensued a silence. Then Medlar's voice rose shrilly. "You've got it? Good! I'll go back for the record now, and . . . what's that? No, my fine, excellent, dutiful sorcerer's apprentice—I'm not skizzled! I just feel like outshouting you, that's all!

"Boy, do I feel like outshouting you! A new destructive technique! But it won't be destructive if used wisely! It will toughen the hide of the animal! And our hides could do with a little hardening, Marston! Triceratops went under because he had a walnut sized brain! But the human animal can take it!

"What did you say? Marston, I swear I'm as sober as you are! Now do as I say! Stop work on the screen! Junk it —or *you'll* get junked! Goodby!"

Medlar was halfway across the street when the truck hit him.

There was a dull thud and—Medlar ascended sickeningly. For the barest instant he pirouetted about like a ballet dancer three feet in the air. Then his spinning body plummeted forward, straight into the path of a crosstown bus.

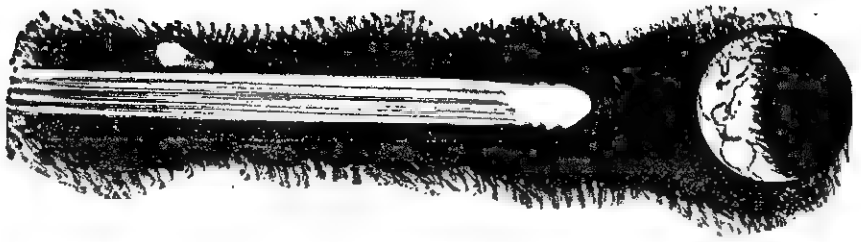
As the bus careened with a screeching of brakes a woman passenger shrieked and covered her face with her hands. There was another heavy thud—followed by the shrill bleat of a police whistle.

Medlar was no longer moving when a darkly palpitating wall of pedestrians closed in about him, screening him from view.

James Marston stood looking down at the still form on the slab, his handsome, almost boyish features distorted with grief.

Ralph Medlar looked shockingly like a limp rag doll, his arms folded loosely on his chest, his pumpkin-flat face shining in the glare which flooded into every corner of the big, vaultlike room.

Forty-eight hours more, Marston



thought, and he'd have solved it! Humanity's brightest hope—in a municipal morgue. Morgues were supposed to be gloomy, but this one was brightly lighted and—it was actually so dark you could see the lights guttering out all over the world!

Psychologically Marston was incapable of self-deception. A cog had slipped somewhere in his makeup and he'd become the rarest and loneliest of human types—a triple-plied realist.

He knew that humanity could not survive without Medlar—and his screen. He did not have to speculate. He *knew!*

Atomic energy and man's innate combativeness were irreconcilable. The human animal went at it hammer and tongs—every instant of every hour. Quarreling with warring elements in himself, and projecting that inner conflict to others also at war with themselves.

Earth could not survive the mere physical presence of such a disharmonic creature armed with weapons so flawlessly harmonic in their destructive potential. A cooling off period dictated by fear—a stalemate of some sort? Impossible! How could men with death at their fingertips avoid the nervous ties of unreason?

As Marston turned from the slab his mind was already busy with jotted notes on a pad. No man of integrity could deviate from his code. And Marston's code was not sufficiently elastic to embrace disloyalty to a dead chieftain.

For good or ill—the formula which Medlar had asked him to jot down would have to be developed and perfected. The formula was not a departure—simply an advance in a field which Marston had made peculiarly his own. A gamma radiation splitting up small enough to be carried and released by a single rocket head — powerful enough to blast a hole in the earth from pole to pole!

As Marston emerged from the morgue he felt a little like a blood-stained savage with a gleaming tomahawk in his hand. Only—it wasn't a tomahawk but a Jovian thunderbolt which had a curious way of twisting up into smoking darkness when he allowed his thoughts to stray from his immediate task.

But Marston had no intention of letting his imagination run riot. He was a practical man—with a job to

do. For one sickening moment the shadow which had preceded him from the morgue had reminded him of a corpse walking upright, its heels trailing blood.

But there was nothing to be gained by conjuring up images which chilled him to the core of his being. Even if he was walking in the footsteps of a dead man—a part of himself was not dead!

James Marston had emerged from obscurity to become the most important young man on earth. But save for his tortured eyes he might have been any young man hurrying off to keep a date with his girl.

Hot jazzmania is a peculiar affliction. Previous to 1935 it did not exist as a sharply defined aberration. The middle nineteen-twenties were known as the Age of Jazz, but jazz decked out as a fine art, a gift straight from Olympus to knowing moderns was still in its swaddling clothes.

A generation ago highly intellectual people were not in the habit of browsing in secondhand record shops with shining eyes and bated breaths, seeking early Duke Ellingtonia, or mint-condition recordings of Louis Armstrong's "West End Blues" and Coleman Hawkins' "Body and Soul."

In 1927 such behavior would have been deemed lowbrow and uncouth. But by the late fall of 1952 it had become a new form of mental disturbance quite as fashionable as Schizophrenia and infinitely less distressing.

There was no need for the afflicted ones to endure the slightest constraint, for they were quite capable of coiling up in their own apartments and consuming vast quantities of liquid nourishment with their eyes fixed on a revolving disk that took them completely out of the world.

To the real initiates it wasn't called swing. It was still jazz and it was hot—a distillation of pure magic that was just being discovered by cultured people a little on the maniacal side.

But since it embodied the immemorial rhythms of a race that had never forgotten how to laugh perhaps it wasn't so mad after all—or if it was a psychosis, could human genius have devised a more exciting form of escape?

And who could say that Jellyroll Jiggers of Harlem, tickling the hot ivories, would not someday blink in dazed bewilderment from Parnassus, with Brahms at his right elbow and Tchaikovsky at his left?

Certainly there was a world of pure sensuous emotion, of simple human joy, that reversed values in a strange way as civilization cascaded in upon itself. And who could say that such a reversal was not to be desired, or in the long run might not justify itself?

Certainly not Mary Anne Cousins or her escort, Dale Winthorpe.

The New Year's party in the perennial Bohemia which was Greenwich Village was not particularly interested in art as a topsy-turvy force.

It was Winthorpe who approached the phono-radio com-

bination and popped the record into the slot at its base. He was aware as he did so that Mary Anne was tugging at his sleeve. He ignored her, feeling giddier than a pelican dressed in formal on a Florida key, balancing an uncorked bottle of Scotch in its gular pouch.

A giddy bird is the Pelican,
Its pouch holds more than its belly can!

"Why did you have to wait until now to play that record?" Mary Anne protested, in a manner more pained than indignant. "Why *did* you? A record with a blank label from a hot jazz bin could be something out of this world! But now we're all too high to appreciate the low notes!"

"Be quiet, my sweet!" Winthorpe mumbled, casting a swift glance around the room. The one girl in the world had sea-green eyes, but for the most part the other guests were too far off for Winthorpe to distinguish the color of their optics. Too far off or—too comatose.

Two couples held the center of the floor, whirling about in all the distortions of the fox trot in friable tempo.

Winthorpe had clicked off the radio, but the dance went on and on—

In a moment they'd have something special to dance to—he hoped.

"Be quiet and lisshun!" he advised his companion. "I waited accidentally—on purpose! You've got to be high as a kite to 'preciate unlabeled hot jazz!"

"Oh, you're a scholar!" Mary Anne tittered. "It *was* called jazz once—long before Barber Bolton blew the first sweet notes on his dented trumpet! Long before! Lafcadio Hearn made an extra special study of Creole music back in the eighties, and he used that very word—jazz!"

"I used it 'cause I'm high as a kite!" Winthorpe protested indignantly.

Someone came up and leaned on the phonograph. "Do you know what's the most single beautiful piece of music in the world?" he asked. "Bach's 'Arioso in A Flat'! And you can't even get it on a record! Not on a single record! Only in an album! Outrageous! I'm gonna write to the company."

"Scat!" Mary Anne said.

She turned to her escort. "That record had better be good!" she warned. "When you turn off the radio at this stage you've got to put something better in its place! You want to get us lynched?"

The phono turntable was moving now unmistakably moving inside the machine. Winthorpe could hear the faint rasp of the pickup. Ordinarily sapphire pickups didn't rasp—but the record was an old one he supposed.

A minute careened by. Two

Nothing.

From the phono there came nothing but the faint rasp of the needle.

Nothing—nothing at all.

Suddenly Winthorpe became aware of an uneasiness creeping over his scalp. The uneasiness was in his fingertips too—and deep inside his brain.

It was like—nothing he'd ever experienced before.

As though something had been on the record that wasn't there any more.

No, hold on—it was worse than that!

There was a positive—something. Not sound—certainly not music. But it was there, deep, deep inside his skull.

There was something not quite right about the absence of sound. The absence held a positive quality like . . . like . . . Waves. Waves pounding monotonously on a rocky coast beneath a leaden sky; a sky that had a sucked-in look. Pounding, pounding, pounding—

It was as though something dreadful was about to happen that would wipe out everything that *had* happened. No—it was more mixed up than that! The something dreadful had already happened and he was listening to—the aftermath!

It was like discovering something half-buried and forgotten and forgetting to remember it. And suddenly—there were images! Dancing through his mind! A funnel of darkness swirling around and around inside his head. And a multitude of shapes being sucked into the funnel; not quite formless shapes like—buildings!

Huge, alien, pylon-shaped buildings, swirling and disappearing into the funnel. And in the depth of the funnel a redness with *other* buildings toppling! Other, familiar buildings! A familiar city disappearing in a fiery blast that sucked the larger, unfamiliar city straight down toward it, and made it disappear, too.

A sense of the unfamiliar being destroyed because something close and familiar was being destroyed sooner and faster.

Winthorpe pressed wet palms to his temples. Sooner—faster. It was like—a shining projection in a nebulous region of time whipping back to become nothing at all! It was like a telescoping of a tomorrow back into a yesterday that had made that tomorrow impossible. It was like— The images vanished, and the pounding resumed its sway.

I'm drunk, he thought simply.

It was like Debussy's "From Dawn to Dusk on the Sea"—but with all the life sucked out of it, with only the faint, elfin horns blowing distantly as dawn came up over the cold sea.

Mary Anne's face had gone white.

Winthorpe shivered convulsively; clicked off the phono.

"Oh, I'm glad you did that!" Mary Anne whispered, her pupils strangely distorted. "Don't—turn it on again! *Promise me you won't!*"

She swayed toward him. His arms went about her, held her tightly. It was warmth—reason again. Tight as he was, he knew the difference.

The tardy reveler who threw open the door just at that moment seemed angry because no one paid the slightest attention to him. He

had a newspaper under his arm and he started waving it the instant he crossed the threshold.

"I shay! You can dance *any* night! But how often can you read news like this? How often—I ask you? Dancing's O.K.—don't get me wrong! Got nothing against it— but what'samatter with taking a squint at these headlines? Just one 'ittle bomb'll blow up everything in sight and I do mean everything!"

No answer.

The reveler stuck a pipe between his teeth, swayed and fumbled in his pocket for a match. He continued to wave the paper.

"Guy named Marston worked it out! Fits into one 'ittle rocket! Terrific! Makes Hiroshima look like this match! See—look! *Pouf*—flame's gone! Snuffed it out with my thumb! But this 'ittle bomb is bigger, better, stronger, brighter! It'll *never* go out! You could press down on it with a billion thumbs . . . ten billion thumbs . . . and it wouldn't go out! Never could!"

The tardy reveler thought he was shouting at everyone in the room. But actually his words were barely audible, for he was mumbling around his pipe.

And Winthorpe had his back to the door and felt only the cold draft which the resentful man had brought with him into the room.

He held Mary Anne tighter.

"We must be nursing a hundred screaming jeebies!" he said. "If I was cold sober—I'd say there was a title for that recording. It's a little hard to explain, but I . . . I *felt* a title!"

"I felt it too!" Mary Anne whispered, her fingers biting into his flesh.

For an instant she stood motionless, fighting the impulse to say nothing further.

Then Winthorpe heard her say in the voice of a terrified child. "I felt it too, Dale! 'World's End'!"

THE END.

WHAT'S WRONG IN THE PATENT SYSTEM?

BY G. S. CURRY

*A **patent** attorney discusses an aspect of law that is of immediate importance to every technical man — patent law, and why ours doesn't work. Strangely, Edison's electric light wouldn't have received a patent under our present set up, precisely because Edison said he worked to invent it! But if he'd fallen down stairs, landed on his head, and seen electric lights instead of stars—then he could have patented it!*

After the first shock of the news of the atomic bomb had worn off many people asked the question—who holds the patent on this immensely destructive yet potentially beneficial force? The answer, of course, is that no one was the inventor because the atomic principle is a law of nature and as such cannot be patented. True, the means and method of harnessing this power are patentable, as for example, the methods of detonation are probably patentable, the means of distillation and separation of the component elements are probably patentable, but the basic law cannot be patented. The answers to this lie in an understanding of the American patent system.

Before entering into any discussion of the Patent System, however, a few of the basic facts should be outlined for the uninitiated.

The Constitution of the United States empowers the Congress to "Promote The Progress of Science and Useful Arts, by securing for limited times to authors and inventors the exclusive rights to their respective Writings and Discoveries". Accordingly, and pursuant to this power, the Congress on April 10, 1790, enacted our first Patent Statute, the terms of which have remained substantially unchanged since 1870.

Under the Patent Statutes, the Commissioner of Patents is empowered, after investigation has

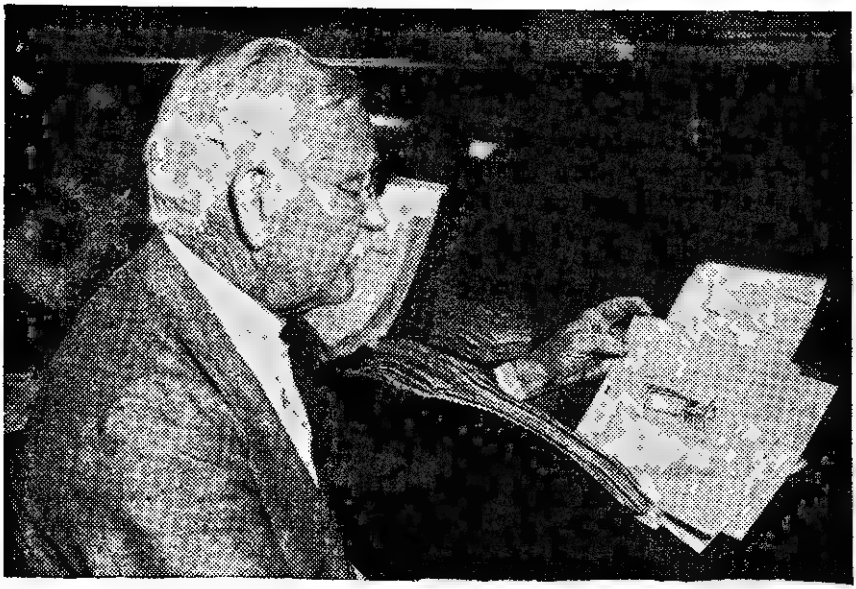
satisfied him that the applicant is the original and first inventor of some new and useful improvement, to grant to such an inventor a patent which will be in force for seventeen years from the date it is issued by the Patent Office.

Suppose there were no patent system for the protection of inventors, what would this mean? It would simply mean that Mr. Average Inventor would have to rely on keeping his process a secret if he could, or, in the case of a machine, he would have to rely on his head start in the field for his reward. Obviously this would not work, for without protection the invention would be immediately copied by anyone wishing to capitalize on it; further, and far worse, an inventor would not care to waste his time perfecting an invention, knowing that he would receive little or no compensation for his efforts. One of the best examples of ability to keep an invention secret lies in the field of blended ingredients where formulas have been handed down from father to son for generations. Certain types of superior glassware cannot be duplicated today because the particular composition of the original formula has been lost and the originals defy analysis.

The object of the patent system, therefore, is to provide a system of rewards whereby inventors are stimulated to further effort. To this end, the patent system provides for a system of rewards whose value is in direct proportion to the inventors' contribution to the public knowledge. Thus, the inventor gives his invention to the public in return for which the Government of the United States grants to the inventor a seventeen-year monopoly in his invention, and he is rewarded monetarily in the proportion of favor which his invention meets in the public eye.

Were it not for the issuance of a patent monopoly to inventors, a great majority of them would attempt to keep their inventions a secret; thus an invention which was neither patented nor commercially a success would be lost to the public as there would be no record of the invention. Therefore, the patent system has two purposes, one to stimulate inventors to greater efforts by offering a suitable reward and, two, to induce inventors to disclose their inventions to the public in return for protection against loss by the disclosure.

The question may be asked "What is a patent"? A patent is a special type of beneficial monopoly. It is not a monopoly in the sense that it withholds or withdraws something from the public. A patent deprives the public of nothing which it had previously. It is like a piece of land in that a person who owns a piece of land may do any legal thing with that land, erect fences, build a house thereon, allow it to remain fallow, or lease it to someone else in whole or in part. So, too, may the owner of a patent lease his patent to others or, in fact, do any legal thing with his patent that he wishes, the only



When a patent is applied for, the files of the Patent Office must be searched for conflicting or overlapping claims included in previous patents, in order that patentability may be established. Such work is often done by attorneys expert in the process.

difference being that he may exercise his exclusive right for a period of seventeen years, when he must relinquish his right to the public and his patent becomes public property.

Let us suppose then that an inventor wishes to patent his invention. The first question that arises is whether his invention is patentable, assuming that the invention is not directly anticipated by prior inventions. The basic statute defining invention Sec. 4886 R.S. (USC, Title 35, Sec. 31) states. "Any person who has invented or discovered any new and useful art, machine, manufacture, or composition of matter, or any new and useful improvements thereof, or who has invented or discovered and asexually reproduced any distinct and new variety of plant, other than a tuber-propagated plant, not known or used by others in this country, before his invention or discovery thereof, and not patented or described in any printed publication in this or any foreign country, before his invention or discovery thereof or more than one year prior to his application and not in public use or on sale in this country for more than one year prior to his application, unless the same is proved to have been aban-

doned, may upon payment of the fees required by law, and other due proceedings had, obtain a patent therefor."

Here we have a statute that is fairly clear and concise and one which has been changed very little from its inception. For the moment then let us look at this statute to see exactly what it means: Mr. Artist goes to a patent attorney and says to him: "I have here a picture which I have painted. I consider it my finest work. Now I understand that I can patent this picture because the patent statute says that 'any person who has invented or discovered any new and useful art, machine, manufacture, or composition of matter—', is entitled to a patent. Now my picture meets most of these qualifications. It is art, it is a composition of matter, and I have manufactured it."

At this point the patent attorney must explain that an "art" according to the interpretation of the statute means a distinct method or process, it does not mean art in the sense of a photograph, painting or piece of sculpture. A "Composition of matter" consists of putting two or more ingredients either chemically or physically together to form or produce a new and homogenous mass. A "Manufacture" is anything made by humans except a machine, or a composition of matter. Next we see that the invention must be "new" and it must be "useful". An invention's newness depends on whether it has been used or disclosed by others before. The usefullness of an invention is not questioned by the Patent Office unless it is frivolous or injurious to morals, but to be useful the invention must be operable, that is, if an example of the patent is made from the specifications and drawings, it must work otherwise such a disclosure is not useful.

Thus we see that since anyone must be able to make an operable object from the specifications and drawings of a patent, Mr. Artist's picture does not qualify and he must seek his protection under the copyright laws, which provide specifically for works of art.

Furthermore, a mere idea is not patentable for there must be a means for utilizing it practically. New laws of nature are not patentable for invention consists not in discovery but in "useful" application of the discovery. For example: Had Newton just recently discovered the laws of gravity he could not patent such laws, but, if as a result of the discovery of the law of gravity, he had invented a method to overcome the laws of gravity then the *method* would be patentable.

An excellent example of this provided by the courts is contained in the Morton Ether case in which the court held that the discovery of the use of ether to render a patient unconscious to pain during an operation was not patentable. The court in this case (5 Blatch, 116; Fed. Cas. No. 9865) said:

"In its naked ordinary sense, a discovery is not patentable. A discovery of a new principle, force or law operating or which can be

made to operate, on matter will not entitle the discoverer to a patent. It is only when the explorer has gone beyond the mere domain of discovery, and has laid hold of the new principle, force or law and connected it with some particular medium or mechanical contrivance by which or through which, it acts upon the material world, that he can secure the exclusive control of it through the Patent Act."

Toward the middle of the nineteenth century an inventor decided that a lead pencil such as we use today was all well and good but humans being prone to error an eraser was also a necessity. Now both pencils and erasers were common and had been in use for many years but it remained for this inventor to conceive the idea of affixing the eraser to the pencil. This he did, and received a patent on his invention.

In the celebrated case of *Reckendorfer v. Faber, 92 U. S. 375*, the Supreme Court considered this patent and declared it invalid saying:

"There might be the advantage of carrying about one instrument instead of two, or of avoiding the liability to loss or misplacing of separate tools. The instruments placed upon the same rod might be more convenient for use than when used separately. Each, however, continues to perform its own duty, and nothing else. No effect is produced, no result follows, from the joint use of the two."

So one of the most important points to remember is that novelty and utility alone are not sufficient to constitute a patentable idea. There must be in addition an invention, in other words, there must be displayed more inventiveness than ordinary skill. Mere dexterity with tools in the solution of a problem is not invention. Likewise, the mere gathering together of known parts or elements to produce a known result, is what is called aggregation and not patentable, but if a new result is accomplished or produced by the joint action of the elements or parts and if such result is not the mere addition of the separate elements, then there exists what is known as a patentable combination.

Likewise the change in the arrangements of parts is not invention nor is the substitution of equivalent materials or parts, or the production of a superior product. Omission of some of the elements or parts of an invention does not form a patentable combination but omission of a part or element together with a rearrangement of the remaining parts or elements to form the same result is invention.

One word of caution to the inventor at this point. The fact that he believes his invention is new and that there is great need for his invention in industry, does not necessarily mean that his invention is actually new. Hundreds of worthwhile inventions are buried in the Patent Office because some inventor lacked the initiative and push to make his invention commercially

successful. I recall an inventor who had studied a particular problem in manufacturing for many years and finally worked out the solution. Both he and his company were equally pleased with the machine and immediately applied for a patent. The application was rejected because a similar machine had been patented over forty years before.

At this point the inventor may ask what can be done to avoid a costly error of this kind? The answer is not wholly satisfactory, but many hours of labor and experimental cost can be avoided if the inventor will sketch out roughly his idea of how his invention will ultimately work and have his patent attorney make a preliminary search on the subject matter. The search of the Patent Office files will give the inventor a fairly accurate idea of the prior development in the field and he may use this as a basis for further experimentation, or, as in the case cited here, it would have revealed exactly what the inventor was looking for.

So much for the question of what is patentable. Now let us take a look at what happens when an inventor applies for a patent.

First his attorney makes out the application papers, drawings and formulates claims to cover the invention. Then the application is forwarded to the Patent Office and assigned to a division for examination. There are sixty-five divisions in the Patent Office and each division handles certain types of subject matter. For example, Division Thirty-one handles "Hydrocarbons: Mineral oils." Division Twenty-two: "Aeronautics; Firearms; Ordnance" and so on.

After assignment to a division the patent receives a filing date, division number and a serial number. Now begins the wait. As of March 21, 1947, the total number of patent applications awaiting action numbered 143,247. The plain truth of the matter is that the examining staff of the Patent Office is too small, and the few examiners employed much overworked. The net result is, after submitting an application it may be a year before it is examined.

This situation is admirable from the standpoint of a large corporation but deplorable from the standpoint of Mr. Average Inventor. Why? Let us see what happens:

As soon as our application receives a filing date and serial number, the large corporation places the product on the market and marks it "Patent Pending". Now the significance of Patent Pending stamped on an article is that no one knows whether the corporation is going to get a good patent on the marketed item or, in fact, any patent at all. What small concern in their right mind would dare to produce anything like this item. If a patent is granted, any other company that has produced a similar article will be liable for damages for infringement.

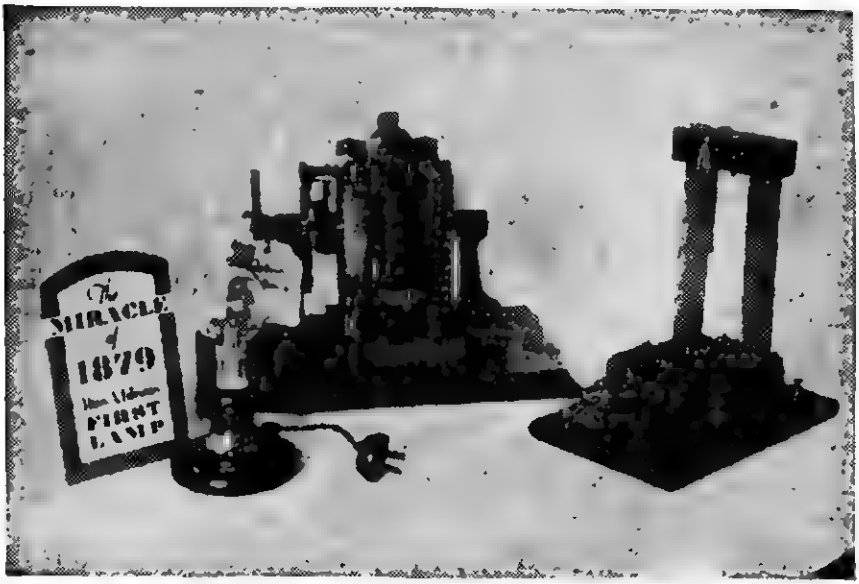
What about Mr. Average Inventor, however? He wishes to either sell his patent or to license

someone to manufacture the article covered by the *expected* patent. The first thing he runs into, however, is the question "Have you a patent?" and the answer is "No". So Mr. Average Inventor cannot market his invention because he doesn't know whether he is ever going to get a patent and, furthermore, he doesn't know what objection the Patent Office has to his application, nor will he know for about a year. He is in the position then, unlike the large corporation, where he must sit and wait until the Patent Office has the time to take up his application before he can approach a prospective buyer or licensee with something to sell.

As we mentioned before there are sixty-five divisions in the Patent Office and each division must decide primarily what is patentable, and what is not patentable. What rules and regulations govern their decisions?

Primarily the basic statute referred to in this article defining what is patentable is the thumb rule. However, should an examiner refuse to pass an invention for issuance and should the applicant then take an appeal to the Board of Appeals of the Patent Office, the examiner is bound by the decision of the Board of Appeals. Should the Board of Appeals of the Patent Office refuse to

Thomas Alva Edison's electric lamp, dynamo and magneto, for which patents were granted in 1879. The Patent Office celebrated its one hundred fiftieth anniversary of service to the public in April.



allow a patent to be issued then they in turn are bound by a successful appeal to the United States Court of Customs and Patent Appeals. I am not going to enter into the many and varied technical points that must be met in order to appeal either to the Board of Appeals or to the United States Court of Customs and Patent Appeals.)

Now the United States Court of Customs and Patent Appeals is influenced by the decisions of the various United States Circuit Courts who, in turn, are influenced by the decisions of the United States Supreme Court.

Thus we have a whole chain of Courts, Boards and examiners each dependent on the other for policy in the interpretation of the Patent Laws. This in and of itself would not be too bad since the procedure is similar to any court action where a lower court is bound by the decisions of a higher court in a similar case. However, except for precedent matters and matters of form, we have no similar cases in patents; each case is an entirely new subject matter which must be decided on its merits, and since each patent and each patent application is a separate problem, the only method of standardization which can be relied on is not a specific case but a *policy*.

Since the highest court in the land, the United States Supreme Court, often decides patent cases we now have the situation where the policy adopted by the Supreme Court is the ruling factor in regard to patents.

Here is the policy of the Supreme Court over the last twenty years. In October, 1941, after many years of strictly interpreting patents, the Supreme Court had before it the case of the Cuno Corp. v. Automatic Devices Corp. 314 U.S., at page 91). In this case the patentee Mead had invented a wireless lighter. The prior inventions showed cigar lighters for automobiles which either had roll-up wires attached or which needed manual pressure to maintain heating contact. Mead, on the other hand, utilized the metallic expansion principle so that the lighter need only be turned in its socket and when the heating element of the lighter became hot enough to ignite a cigar or cigarette, the expansion of the metal surrounding the lighter broke the electric circuit so that there was no danger of burning out the heating element and the lighter could be removed completely from the socket.

In this case the Court declared the patent invalid, stating,

"That is to say, the new device, however useful it may be, must reveal the flash of creative genius, not merely the skill of the calling. If it fails, it has not established its right to a private grant on the public domain."

Something new has now been added. You will recall that the basic statute reads "any person who has invented or discovered any new and useful art, machine," et cetera. There is nothing, therefore, in the statute that requires the "display

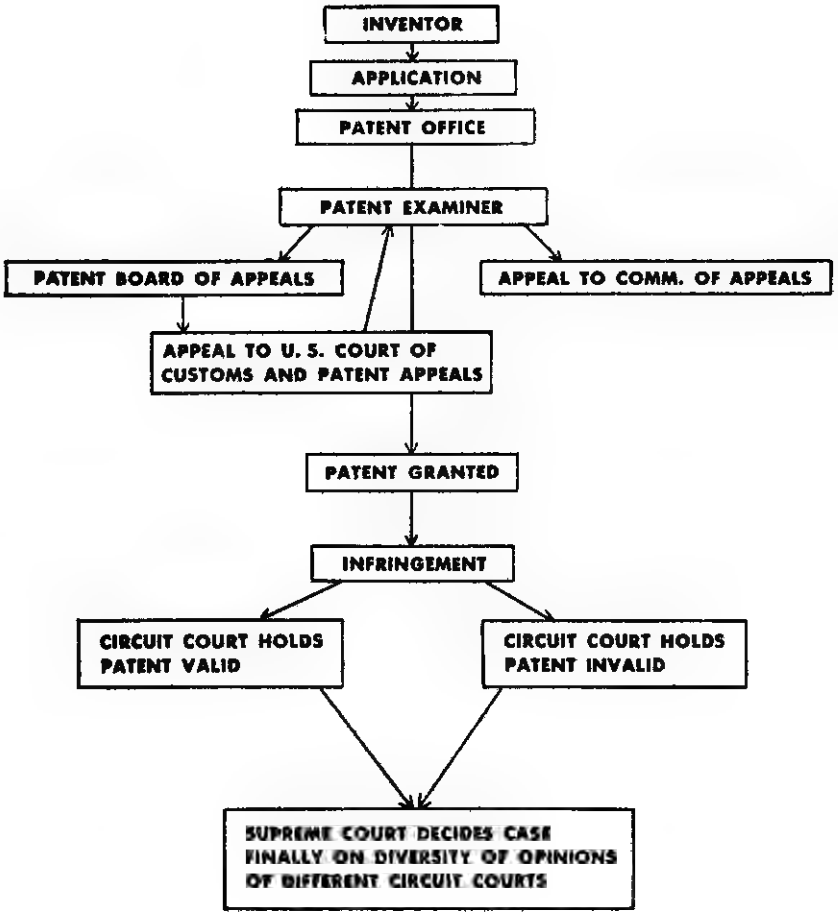
of genius" yet the highest court in the United States has read into the Statute just that. While it is true that great difficulties arise in the establishment of a division line between "mechanical skill" and "invention," this difficulty is not insurmountable and the policy of the Patent Office in the past was to lean towards the inventor, but now the examiner and the lower courts not only must distinguish mechanical skill from inventiveness, but, also must make certain that a "flash of genius exists."

We must examine some of the results of this decision to see how the policy is applied.

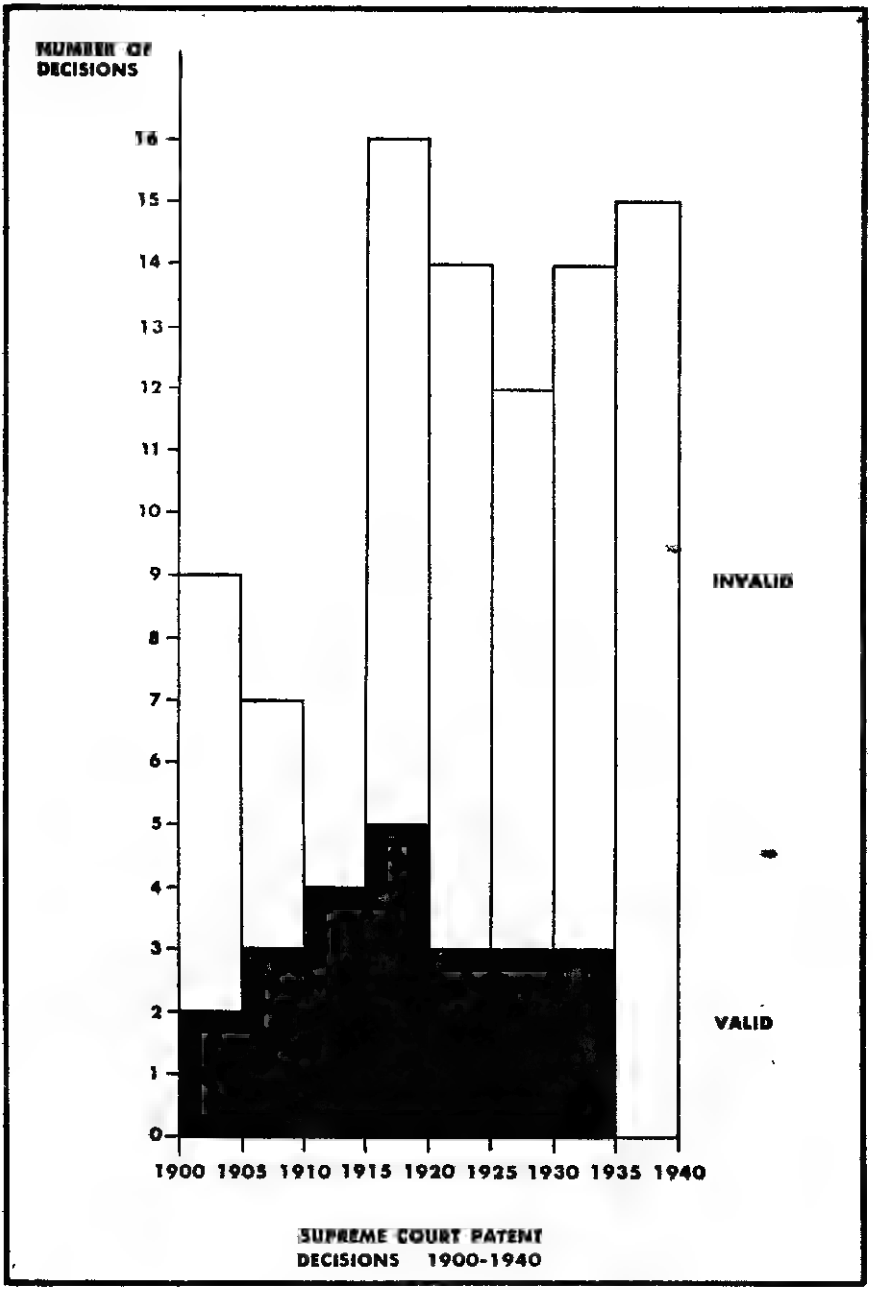
In the case of Sinclair & Carroll Co., Inc. v. Interchemical Corp., 65 United States Patent Quarterly, at page 267, the Supreme Court considered a patent for a printing ink suitable for printing on a non-absorbent paper, substantially non-drying at normal temperatures, but which dried instantly when the printed matter was heated. In this case apparently, the court attempted to disclaim its "Flash of Genius" theory by saying: "It (the court) is not concerned with the quality of the inventor's mind, but with the quality of his product."

What did the court find as to the quality of the product in this case? It found for one thing that the product was *new* saying "The ink disclosed in these prior patents did not contain the same solvent or solvents similar to those which Gessler — the inventor — recommended." The court also declared the invention to be *useful* saying "But the ink disclosed in the patent does have utility in printing magazines and the materials which use smooth nonabsorbent paper. Since its disclosure by Gessler, it or similar inks which are claimed to infringe, have been used to print *The New Yorker*, *Collier's*, and *The Saturday Evening Post*. Such publications previously would require considerably more time for printing since the reverse side of the paper which they used could not be printed until the first side was dry." The court also admits in its opinion that "many efforts were made to eliminate the necessity for delay."

The court after finding that the product was of great usefulness and successful, attempted to delve into the inventor's mind. Quoting from the testimony of the inventor, it found that he had been approached with the problem, that he had learned that some printing rolls could be heated, and that the inventor had selected from a catalogue list, a solvent which met his specifications. With these facts in view the court decided that there was lack of invention saying: "It is difficult to believe that if Hanson had known of the quality of butyl carbitol, if he had the Carbide and Carbon catalogues before him, he or any other person skilled in the art could not have devised the ink which Gessler claims to have invented. We reach this conclusion even though Hanson testified in an affidavit introduced in support of a motion for rehearing that he had worked for over a year trying to


INVENTOR
APPLICATION
PATENT OFFICE
PATENT EXAMINER
PATENT BOARD OF APPEALS
APPEAL TO COMM. OF APPEALS
APPEAL TO U. S. COURT OF CUSTOMS AND PATENT APPEALS
PATENT GRANTED
INFRINGEMENT
CIRCUIT COURT HOLDS PATENT VALID
CIRCUIT COURT HOLDS PATENT INVALID
SUPREME COURT DECIDES CASE FINALLY ON DIVERSITY OF OPINIONS OF DIFFERENT CIRCUIT COURTS

Possible course of a patent from application to final decision by the Supreme Court.



SUPREME COURT PATENT DECISIONS 1900-1940

produce such an ink and did not succeed."

Therefore even though the Supreme Court has tried to refute its "Flash of Genius" theory it has nevertheless based its decision on the quality of the inventor's mind with which the court had stated it was not concerned.

Any attempt to analyze these decisions brings home the fact that the Supreme Court has decided that any invention which can be rationalized after it is made does not involve an invention worthy of a patent. To the court it is immaterial that no one had ever accomplished the same result, the only inquiry being whether the inventor displayed enough "Genius," in perfecting the invention.

For many years after the radial airoplane motor had been invented one paramount vital problem had yet to be solved. The problem resolved around the inability of the engineers to evolve an infallible system for draining the cylinder heads of all the cylinders when the motors were stopped. Inability to drain this oil properly meant seepage of the oil through worn valves so that when an attempt was made to start a motor, which had an accumulation of oil in its cylinder, the result was a bent connecting rod from the tremendous pressure caused by the incompressible oil. Many schemes were tried such as suction but the problem remained unsolved until an aviation mechanic solved the problem by placing an oil sump lower than the lowest piston head so that oil might drain by gravity into the sump and be returned to the cylinder head by pressure. Here then was a solution of all the troubles and a solution which had for many years been sought. In the case of *Picard v. United Aircraft*, 128 Fed. (2) at 632, decided in May 1942, the District Court, after hearing the testimony outlined above, stated that it saw in the decisions of the Supreme Court for over a decade or more "an increasing disposition to raise the standard of originality for a patent" and recognized a new doctrinal trend which it was the court's duty not to resist but to follow cautiously."

Therefore, the District Court followed the Supreme Court decisions and declared that the Picard invention was not an invention but a mere application of existing knowledge to a new problem and therefore mere mechanical skill.

Subsequently in 1943 the National Patent Planning Commission, appointed by the late President Roosevelt, stated in its report: "There is an ever widening gulf between the decisions of the Patent Office in granting patents and decisions of the Courts who pass upon their validity." Later, in the same report, the Commission sidestepped the issue as to whether the standards of the courts were too high or the standards of the Patent Office too low, saying that the issue was not for them to decide but that there should be uniformity.

Now take a look at the results of the Supreme Court's decision in

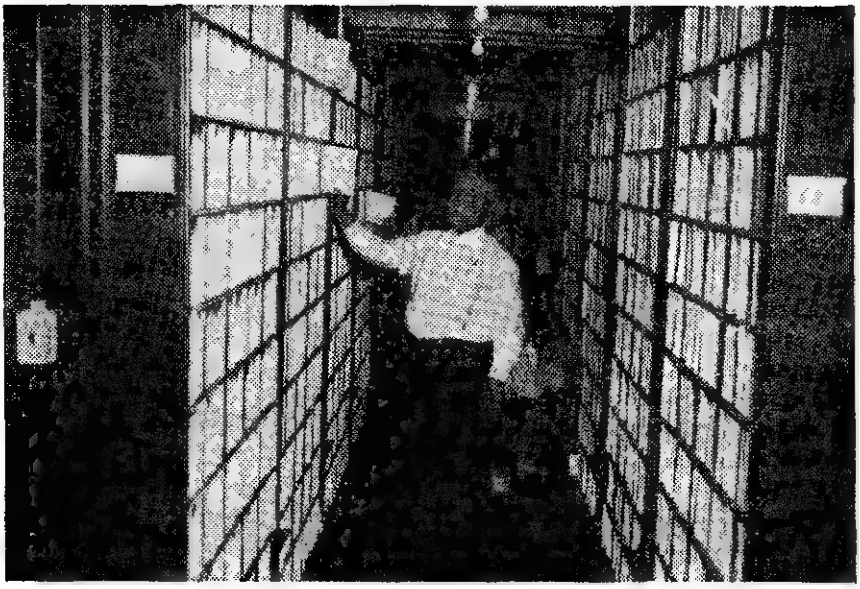
the Cuno Case, with respect to the basic theory of invention by individuals versus invention by research groups.

In the case of *Potts v. Coe*, 60 United States Patents Quarterly, at page 226, the District of Columbia Court of Appeals held a patent invalid for lack of invention stating that "We have held that a step forward which, considered in connection with the highly developed condition of the art, reasonably could be expected from the research of highly trained specialists is not invention. Thus neither the result of great industry in experimental research nor the successful product of a gradual process of experimentation over a period is invention. . . . In order to evaluate the contribution of the inventor the court must reconstruct the conditions under which he worked, with emphasis on the contribution of others. . . . In other words, patents are not intended as a reward for a highly skilled scientist who completes the final step in a technique, standing on the shoulders of others who have gone before him. By the same token they are not intended as a reward for the collective achievement of a corporate research organization."

With the preceding decision in mind let us assume a hypothetical case. Let us suppose that A is an uneducated individual who lives by his labor rather than his wits. B is a large manufacturing concern employing numerous research engineers. Now A in the course of his labors conceives the idea of a machine which will plow the ground, fertilize it, harrow it and plant the seed all in one operation. B on the other hand, through the expenditure of thousands of dollars on research, has finally, through the efforts of one of its engineers, succeeded in inventing exactly the same machine at the same time. Now with the recent policy of the courts in mind it is obvious that A is entitled to a patent for his invention for his is the "flash of genius," but B is not entitled to a patent for the invention, say the courts, was merely the obvious result of "Routineering" and continuous development by those skilled in the art.

The rule of thumb, therefore, as applied by the courts is whether the individual merits a patent for the invention and not whether the invention itself is patentable. In other words, it is as if the court had sentenced a child for the sins of its parents rather than judge the child on its own merits.

To go a step further, in order to bring our discussion of cases up to date and look at one of the most recent cases decided by the United States Circuit Court of Appeals for the second Circuit in the case of Maxwell M. Bilofsky and Industrial Electronics Corporation v. Westinghouse Electric Supply Company, and the Bryant Electric Company, Inc., decided March 7, 1947, in which the court said that although the inventor had not been



A single passage among the labyrinthine rows of shelves which hold the Patent Office records. No wonder a patent search takes time! The Office is far understaffed and poorly budgeted for the amount of work on hand and in prospect, with no effective relief in sight.

completely anticipated by the prior inventions, nevertheless, the invention was not a substantial step beyond the prior art and therefore was invalid. In support of this contention the court relied on and cited the Cuno decision of the Supreme Court. In other words the court said in effect: We cannot find anything which would invalidate the Patent on any ground shown but we will invalidate the patent anyway for lack of invention.

It is interesting to compare the present line of decisions with the attitude of the Circuit Court of Appeals for the Third Circuit in the case of Radiator Specialty Co. v. Buhat. 39 Fed. (2nd) 373,378, C.C.A. (1930). This decision was handed down in 1930 and represents a far cry from the present attitude of the courts yet it does present from the writer's viewpoint and from the viewpoint of the inventor the correct lines of reasoning on the question of invention. In this case the court said:

"In announcing this judgment we may observe that, though invention it (the invention before the court) is not a great one. Yet though not the work of genius, it still may be invention. Invention

is not always the offspring of genius; more frequently it is the product of plain hard work; not infrequently it arises from accident or carelessness; occasionally it is a happy thought of an ordinary mind and there have been instances where it is the result of sheer stupidity. It is with inventive concept, the thing achieved, not with the manner of achievement or the quality of the mind which gave it birth that the patent law concerns itself."

The situation as it exists today is not only impossible but nigh unto intolerable, as far as inventors are concerned, and has been getting worse over a period of years.

During the past fifteen to twenty years the sweeping trend of the United States Supreme Court toward invalidating patents has been growing as shown by the chart. Further, during the past five-year period, seventy-five percent of 462 patent opinions handed down by the Circuit Courts held the patents before them either invalid or not infringed. What has that to do with Mr. Average Inventor?

It has this to do with Mr. Average Inventor. If the situation is not remedied, fewer and fewer patents are going to be issued. Indeed, it is extremely difficult today to obtain a patent of any worth due to the multitudinous objections

A part of the search room where previous patent data can be looked up and studied. Just to check all similar patents often takes months of work and investigation by experienced, well-trained researchers.

made by the Patent Office. The Office must take its cue from the trend, and its reputation is at stake since the highest court in the land has seen fit to say in effect "You, the Patent Office, are granting patents which are invalid for lack of invention."

Let us once more look at the proposition regarding the patentability of the atomic bomb. Originally we decided that the principle as a law of nature was not patentable, but we did say that the means and method of harnessing atomic power were probably patentable. In the light of the present decisions of the Supreme Court we must now refute that statement, because we know that atomic power methods and the atomic bomb itself are a result of the concerted efforts of many scientists developed through extensive research. Under the decisions of the Supreme Court nothing about atomic energy would be patentable because the court has said that, if enough scientific heads are brought together, the correct solution is bound to result and this would not be inventive genius but a collective achievement of a research organization.

If the situation becomes any worse or even remains as it is, the ultimate result will be to destroy the very foundations of the Patent System in the United States as avowed in the constitution where the ultimate object was to provide a system of rewards whereby inventors are stimulated to further effort.

The excellence and efficiency of American industry is founded on a multitude of small inventions which when gathered together formulate the mightiest industrial organization the world has ever witnessed. Big so-called Pioneer inventions occur infrequently but it is the many small improvements and modifications which make such pioneer inventions more efficient.

Many a Great Idea won't quite work until the little idea improves it.

It is conceivable that large corporations in America today finding that they cannot receive valid patents as a result of the millions which they have spent in research would do either one of two things, either give up their research or practice their inventions in secret. Either course would be to the great detriment of the public, and immeasurably damage the advance of mankind. In this day and age research organizations are not a luxury but a necessity. With science as far advanced as it is, the tools for invention are costly and the small inventor increasingly finds himself unable to keep abreast of the latest developments; he must, therefore, have the assistance of research facilities, such as large organizations only can afford.

You as a reader or inventor may say "that is all very well; but what is the remedy?" The remedy is simply this, Congress must pass a new patent law which more specifically defines invention and just what kind of an invention will be entitled to a patent. That this needs

to be done is agreed by most of the various patent associations. What they cannot agree on is the form of the definition.

This article is written not as a discouragement to inventors but more in the hope that through it a better understanding of what is wrong will be circulated. Basically and fundamentally the Patent System is sound. What is needed is body of men who gave the Patent a new injection of life by the very System its inception.

THE END.

FLYING SOMETHINGS

(*Continued from page 5*)

Because we are not unnaturally, anthropocentric in our concepts, the background idea has almost invariably been that it was an empire started from and by Earth. Inasmuch as there are some million million stars in this galaxy, and present knowledge indicates that a very high percentage of stars may have planets, the chance of Earth being the first to launch such an Empire must be one in several thousand million, just on the basis of pure chance. If such an Empire were launched, and one thousand scouting explorers sent out, each scout searching one solar system a month—*very* busy and superficial scouts they'd be—only twelve thousand systems a year could be searched. After a million years of this scouting, not even one percent of the galaxy would be covered. Of course, the human race is less than a million years old; the Solar System makes a swing around the center of gravity in one or two million years, and the whole galaxy gets pretty well scrambled in that length of time, so a remapping would be required.

For many years, astrophysicists were a bit uncertain of one item of data; as far as could be measured, our galaxy appeared to be almost one hundred times larger than any other we could see—to contain nearly one hundred times as many suns. It seemed improbable—but there it was.

The point has been cleared up recently. Because our galaxy is so much nearer, we can see it better. Galaxies are concentrated toward the center, becoming more and more diffuse as you move out from the center. At a certain distance out from the center of other galaxies, our photographs can no longer pick up the less densely clustered suns; actually the galaxies extend much farther out. Actually, our sun is so far from the center of our galaxy that from some other galaxy, our cameras wouldn't pick it up at all—it would be part of the lost fringe. We're in the galactic backwoods. A galactic empire wouldn't bother much with so sparsely starred a region as this.

THE EDITOR.

BOOK REVIEW

"SPACEHOUNDS OF IPC" by Edward E. Smith, Ph.D., Fantasy Press, Reading, Pa., 1947. $3.00

One must, I suppose, be an old-timer to remember the impact of Edward E. Smith's "Skylark of Space" on science fiction readers of nearly twenty years ago. The serial version appeared in 1928, after two years in which the best of the reprint material had been picked over, and from the first it was evident that a new something—almost as new as Seaton's now famous X-catalyst—had been added to what was then called scientifiction. With the first "Skylark" story and its sequel, "Skylark Three," Edward E. Smith raised the curtain on a whole school of science fiction writing, of which ASTOUNDING Science Fiction's now fairly well standardized brand of story is the direct descendent. These were stories which drew convincingly on the type of physical research which was noticed almost daily in the headlines and feature stories of the nation's press—and which soared on to breath-taking visions of convincing extrapolation which included universes in their scope. What Weinbaum's "A Martian Odyssey" did to launch the "screwy animal" cycle of stories, and "Slan" to open the field of mutant humanity, the "Skylark" stories did to introduce the "super-physics" field of science fiction. Like "Slan", they introduced an area which has become a major division of scientific imagination.

"Spacehounds of IPC" was E.E. Smith's third novel. It has always been my favorite of all his stories, and it is pleasing to be able to report that a new publisher, Fantasy Press of Reading, Pennsylvania, has selected it as its first book. Let me say here that as a book it does credit to its publisher in format and typographical sandards. With luck, Fantasy Press—guided by the experienced collector, fan, writer, and amateur publisher Lloyd A. Eshbach—may do for science fiction what Arkham House—under the aegis of the similarly qualified August Derleth—has done for weird fantasy.

"Spacehounds" appeared serially in 1931. As I recall the reader-letters of the time, it did not have the enthusiastic reception which had greeted the two "Skylark" stories. It may have been as a result of this tepid response that Dr. Smith, in his later novels of the Lensman series—which Eshbach tells us in a

jacket blurb should actually begin with "Triplanetary" — dedicated himself utterly to deep space and has rarely paid more than a passing visit to his own solar system.

For my money, "Spacehounds of IPC" was and is the most believable of all Smith's books. Reading it again with the recently published edition of "Skylark of Space", it shows considerably greater expertness in writing. "Steve" Stephens is the most likable and real of all Smith's characters. This may be because the whole "Swiss Family Robinson" drama of the book is played out within the boundaries of our own system, in a future which even in 1931 seemed close enough to be within reach, and with tools and weapons only a little different from those of our present laboratories. (Incidentally, Dr. Smith has gone over the story to touch up the passages of explanation, bringing in such modern terms as "radar" for effects which had no popular name in 1931.)

"Spacehounds" is the story of a girl and a scientist, who escape when the spaceship on which they are bound for Mars is attacked, destroyed, and its wreckage taken in tow by hostile Jovians making their first raid into the inner System. They find a haven on Ganymede, one of the moons of Jupiter, and have the challenge of building, very nearly from scratch, an ultra-wave radio with which to summon help and warn Earth of the Jovian menace. In the later chapters other strange races, human and non-human, come into the picture and there are several typical E.E. Smith space-fights with everything packed in but the kitchen sink, but through it all Stephens remains for me a real man trying to solve real problems in a setting which you can see for yourself with a good telescope.

In the "Lensman" stories marvel is piled on marvel and super-weapon tops the climax of previous super-weapons with such rapidity that at times the effect is one of a formalized shadow-play—almost a kind of dance of symbolic figures in an intra- —or extra- —galactic setting. "Spacehounds" stays close to home, for all its marvels. Maybe high school boys of today will have the problems to solve that Stephens and Brandon and Westfall, the scientific "Big Three" of the book, must work out to defeat the *hexans* and gain an understanding of the alien sciences of Titan, Callisto, and the *vorkuls* of Jupiter's south pole.

To illustrate this edition of "Spacehounds", Fantasy Press has found a new artist, A.J. Donnell. His excellent jacket is somewhat reminiscent of magazine illustrations for this and other of Smith's stories, and the interior illustrations are sound but not outstanding. The vignettes he has drawn for chapter heads, however, do add a great deal to the book and are a feature which the publisher should continue if it is economically possible to do so. Jack Williamson's "League of Space", well known to ASTOUNDING Science Fiction readers, is second on their list, and John Taine's unpublished "Forbidden

Garden" will be third. Other Smith yarns from "Triplanetary" on, Weinbaum's two "Black Flame" stories, and others by Van Vogt and a long line of other well known authors are announced. Collectors will be interested in the fact that a limited number of copies of each edition will be inscribed by the author, when that is possible.

Any publishing venture which promises to give science fiction the permanence and standing it deserves will be watched with interest by all science fiction readers. Some firms which showed early promise have not been able to make the grade. Only sound choice of books and authors, hard business sense in gauging format and price, and the kind of imagination in publishing and promotion which has made Arkham House a success will keep such a venture going. Fantasy Press seems to have the odds on its side.

P. SCHUYLER MILLER

IN TIMES TO COME

November, of course, starts E. E. Smith's new Lensman story—"Children Of The Lens." Cover and black and white illustrations by Hubert Rogers. There is very little one can say about a Smith story; if you've been reading since before Pearl Harbor you know his work; if you haven't, I can't describe it.

But there's one disappointment on "Children Of The Lens"; we find that its extreme length makes four installments, rather than three, necessary. The story is well over 100,000 words—and we have a few other items to present.

For instance, there's a Lewis Padgett story next month, and Ted Sturgeon, and an article by J. J. Coupling.

And in December, there's Simak with another "City" series yarn, and a Van Vogt yarn—

THE EDITOR.

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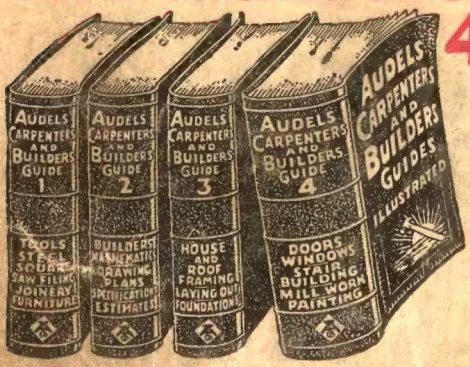
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